HARVEIAN LECTURES

ON

THE MODE OF DEATH FROM ACUTE INTESTINAL STRANGULATION AND CHRONIC INTESTINAL OBSTRUCTION.

DELIVERED BEFORE THE HARVEIAN SOCIETY OF LONDON, 1884.

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THE MODE OF DEATH FROM ACUTE INTESTINAL STRANGULATION AND CHRONIC INTESTINAL OBSTRUCTION.

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LECTURE I.

THE MODE OF DEATH IN INTESTINAL STRANGULATION AND INTUSSUSCEPTION, WITH REFERENCE TO THEIR TREATMENT.

I PROPOSE, in the following lectures, to bring before you some points connected with abdominal surgery, and to consider, first, how death is occasioned in intestinal strangulation and intussusception; and, secondly, how life is destroyed by intestinal obstruction. The pathological inquiry will be illustrated by cases,[1] and followed by some practical conclusions.

Hitherto, it has been the custom to place cases of strangulation of the bowel amongst those of obstruction, indeed, to consider them as only one of its forms. There is, I am convinced, in this arrangement a grievous error; since, in strangulation of the intestine, obstruction is only one of its symptoms, but not the cause of danger or of death; whereas, in cases of intestinal obstruction, the obstruction is the prominent and dangerous feature, and from it, or it chiefly, the consecutive changes are brought about.

From this proposed plan of procedure, you will see that the basis of

[1] All the cases quoted in these lectures, unless otherwise expressly mentioned, have been under my own care, or that of my medical and surgical colleagues at Guy's Hospital. The *post mortem* book has been resorted to for illustrative cases in preference to the clinical, since, from the former the most unquestionable data are obtained.

the practical conclusions which I shall draw will be laid upon pathological knowledge, and that what is to be done to save or prolong life, will be educed from what is known of the changes which tend towards its destruction. I do this, moreover, under the assured conviction that it is by this method alone that the scientific practice of surgical art is to be promoted.

And, first of all, with reference to what is commonly called "acute intestinal obstruction," but which should be designated "intestinal strangulation," is it true that patients die from the obstruction—that is, from the arrest of the passage of fæces along the intestinal tube? or is it more nearly accurate that the obstruction is merely a symptom of some condition which, if not relieved, must bring about a fatal result; fatal, however, not from obstruction to the passage of fæces through the lumen of the bowel, but from changes in the bowel itself and the parts above?

I believe this latter interpretation to be correct, and would adduce as proof the case of acute strangulated hernia relieved by operation or taxis, as the case may be, and in which the symptoms, however severe before its reduction, at once cease on this result being effected; although, possibly, no action of the bowels may be obtained for two or three weeks subsequently, the want of action not giving rise to any special symptoms. In fact, in this instance, as, in all other cases of acute or a like nature, the symptoms are directly due to the arrest of the circulation of the venous blood through the strangulated bowel, and not to the obstruction to the passage of the intestinal contents. The action of the bowels may, as a clinical symptom, be one of value to prove the patency of the intestinal tract, and to suggest, consequently, the completed removal of the cause of the strangulation; but it is well to remember that the symptoms excited by a strangulation of the bowel are not due to obstruction alone.

It was from a want of appreciation of this fact that the older surgeons gave purgatives in cases of internal intestinal strangulation, as well as in cases of strangulated hernia after its reduction; and it is, I believe, from the want of a full appreciation of the bearing of the same fact that, in examples of intestinal strangulation not hernial, practitioners seem, even at the present day, to trust too much to physic, and various manipulative and other acts, when there is nothing less than the removal of the strangulating cause from which the slightest good is to be anticipated.

To impress this point, allow me to consider briefly the mechanism of what is called strangulation, and to illustrate it as best seen in an example of strangulated hernia—though, whether the case be one of external or internal hernia, of volvulus or twist, or of strangulation by a band, the mechanical results are identical. And here let me say, when interference with the circulation is mentioned, it is to the venous and not to the arterial circulation that reference is made; and that, by interference to the circulation, is meant obstruction to the passage of venous blood from the parts strangulated to those below, the obstruction varying from mere slowing of the venous blood-current to complete blood-stasis. In a case of hernia, when reducible, the circulation through the displaced knuckle of bowel may not be interfered

with; and, under such circumstances, no other symptoms than those caused mechanically by the swelling are found. But if, from some cause or other, the hernia becomes obstructed, and the venous circulation is retarded by the mechanical pressure of the contents of the knuckle, or any external cause, local symptoms of fulness, or even of pain, and possibly of some swelling of the tumour, may be produced; and, with these local symptoms, there will possibly be the general one of nausea and dragging at the pit of the stomach, passing on, if not relieved, to vomiting and severe local pain. When the venous circulation is entirely arrested, the local and general symptoms of acute strangulation show themselves by vomiting, paroxysmal abdominal pain, and, perhaps, obstruction.

These symptoms, it must be remembered, are the same in all forms of acute intestinal strangulation. They are alike in every variety of external as of internal hernia. When we are, therefore, called to a case of external or internal strangulation, we should mentally see either the gradually increasing venous congestion of the strangulated part, or its rapid congestion; we should picture to our minds the venous blood-congestion passing on to a more or less rapid complete blood-stasis; and, when this stage is reached, we must not forget that the death of the strangulated bowel is not far off. Let us remember that slight interference with the circulation through the bowel gives rise to symptoms of incarceration; that greater interference excites those of obstruction, and that complete interference produces those of strangulation, as signified by vomiting. Should the process of increasing congestion be slow, inflammation may complicate the change, as demonstrated by effusion, or possibly ulceration; should the process be rapid, static gangrene, the direct result of the venous blood-stasis, is the pathological result. When the blood-stasis is great, as it is in the acute forms of strangulation of the intestine, hæmorrhage from the bowel, as a mechanical result of the congestion, is by no means an uncommon complication. I have seen it many times in the acute congenital form of strangulated inguinal hernia, both in the form of extravasated blood into the knuckle of strangulated bowel in the hernial sac, as well as of extravasated blood into the intestine above the seat of strangulation. In some cases, blood may even be vomited, and passed *per anum*, as reported in Case XI. Under both circumstances, the hæmorrhage is clearly due to the suddenness, as well as to the completeness, of the arrest of the venous circulation at the seat of strangulation, and the mechanical rupture of the turgid veins from their overdistension. Such a condition of intestine, when seen in a hernial sac, is serious, but not necessarily of fatal import; it means that the intestine thus engorged is in the condition that precedes static gangrene, though it has not reached that state; and it should lead the surgeon, where the subject of the hernia is otherwise favourable for repair, to hope for a good result, since such blood-stasis is, so long as the bowel is alive, capable of complete repair.

In cases in which the strangulation is subacute, and in which the bowel above the seat of obstruction is much distended and full of fæces, ulceration is often met with, the ulcers being due to the me-

chanical pressure and irritation of the fæcal contents upon the distended and, possibly, inflamed bowel. Such ulceration is seen in the chronic forms of obstruction, as in the more acute varieties; and, in both cases, it is due to the mechanical irritation of retained fæces. In other cases, the bowel may even rupture.

In the following cases of obstruction of the small intestine, due to the presence of a band, possibly the result of an antecedent hernia, these points are well illustrated.

Case I. *Small Intestine Obstructed by a Band associated with Hernia; Ulceration of the Bowel above the Obstruction.*—James C., aged 46, was admitted into Guy's Hospital, under the care of Mr. Cock, on January 25th, 1869, and died twelve days later, on February 6th. He had been ruptured on the right side for years. Two days before admission, when carrying a sack of flour, he had sudden pain in his abdomen, which was soon followed by vomiting; but the bowels acted twice. The vomiting continued, with abdominal paroxysmal pain and obstruction. The hernia was explored without benefit, omentum alone being found, and the man died, unrelieved, on the fourteenth day after the commencement of the symptoms. At the *post mortem* (38) examination, made by Dr. Moxon, the omentum was found ligatured, in a hernial sac, on the right side of the scrotum. The thoracic viscera were healthy. The abdomen was distended, and, when opened, distended coils of the small intestine were visible. This distension suddenly ceased at the right sacro-iliac synchondrosis, where the bowel was obstructed as follows. The last two feet of the ileum, and the corresponding mesentery, were fastened down to the psoas muscle by a band of old inflammatory thickening, the bowel being flattened rather than constricted. At the proximal end of the obstructed bowel, the distended coil hung down into the pelvis; the mesentery was narrowed, probably congenitally. The intestine, above the seat of obstruction, was full of ulcers from distension.

Case II.—A female child, aged 9, was admitted in 1876, with severe symptoms of intestinal obstruction of thirteen days' standing. She died, unrelieved, on the fourteenth day. After death, the lower half of the ileum was found bound down to the spine by old peritoneal adhesions, and the distended jejunum was ruptured.

In the first case, the man lived fourteen days after the first onset of the symptoms, which were typical of what has hitherto been described as sudden intestinal obstruction, but what I would wish to call internal strangulation. The band causing the obstruction was not rigid, but was enough to flatten the bowel and so obstruct it as to interfere with its venous circulation, and to bring about distension of the intestine above and collapse of it below. The small intestine above was, moreover, ulcerated from distension. Had the man lived longer, it is probable that he would have died from perforation of the intestine from ulceration. In the second case, the jejunum was directly ruptured from overdistension; and in the following case, ulceration took place in the cæcum from obstruction backwards, the cause of the obstruction being an omental adhesion to the ascending colon.

Case III.—It occurred in the subject of Alfred R., aged 37, who was suddenly seized, on January 27th, 1877, with abdominal pain,

vomiting, and intestinal obstruction. He was admitted on the 28th, the day following his attack, when the abdomen was greatly distended, and relief was afforded by paracentesis with a fine trocar and cannula. This benefit was, however, only temporary, and the man sank on the eleventh day. After death, the cæcum was found to be enormously distended, and situated in the centre of the abdomen. In it were circular ulcers exuding fæces, with recent peritonitis. The ascending colon was wonderfully twisted with an omental band, and to this the obstruction was due. The descending colon was contracted and empty. In this, as in the former cases, the ulceration was due to the pressure backwards of the intestinal contents. In it, the walls of the bowel were perforated, and general peritonitis was the result. In the first case, a like result would have ensued, had the patient lived longer. In all cases of subacute strangulation, the probability of this result occurring should be entertained.

What bearing, then, should these facts have upon surgical practice? Are they such as to lead the practitioner to depend upon a Surgery of Hope, based upon the administration of drugs which mask symptoms, but do nothing towards the relief of the mechanical conditions upon which the symptoms depend? Or should they lead him to look boldly at each case as it presents itself, and to act decidedly and with precision? In a case of strangulated hernia, the rule is now well recognised that, on the appearance of vomiting—from the first occurrence of which symptom the date of strangulation is calculated—no time should be lost in the reduction of the hernia, either by taxis or herniotomy; for surgeons and pathologists well know that nothing less than the mechanical relief of the mechanical condition which is called strangulation in a hernia can be of essential service; and that, until this end be secured, opium only masks symptoms and brings about a fool's paradise, where the Surgery of Hope may exercise itself at the expense of scientific knowledge and patients' lives.

In a case of internal hernia, or of internal strangulation, from whatever cause—conditions ushered in by the same series of symptoms as indicate an external hernia, though without an external swelling—surely the same sound principles of surgery are equally applicable; and it behoves the surgeon, in the one case as in the other, to relieve the mechanical condition which is called strangulation by the only means by which relief can be afforded, and that is by operation.

In cases of external, or of internal, strangulation, the same series of changes that I have sketched out take place. In the one instance, as in the other, the slight retardation of the venous blood-current, which may, at first, have existed, becomes aggravated; the blood-stasis, which was, at first, slight, rapidly becomes more nearly complete, passing on to static gangrene. Under such circumstances, unless relief be found, nothing but a fatal result is to be expected. Whether the cause of the obstruction be an internal hernia, a volvulus, or band, the mechanical condition called strangulation exists, and, unless this can be relieved, the end by death cannot be averted. To make a more special diagnosis as to the form of strangulation is not required; to wait for it, is often to wait for a *post mortem* investigation. An ex-

ploratory abdominal operation is the only scientific surgical proceeding, and this should be undertaken as soon as a diagnosis of strangulation is made. In the case of a patient suffering with symptoms of strangulated bowel, and the subject of an old hernia, the rule of surgery is to explore the hernia, and, if nothing should be found in the hernial swelling to explain symptoms, to explore the neck of the hernial sac or abdominal cavity. In a case of a patient suffering with symptoms of strangulated bowel, but without an actual hernia, I trust a like rule of practice will soon be followed; and that a surgeon, in the future, will at once, on the diagnosis of strangulation being made, explore the abdomen, first to find out the true cause of the strangulation, and, secondly, to relieve it. In either case, failure will often follow the attempt; but success is likely to attend an early effort, when it will fail to follow a late one. And where success ensues, it means a life has been saved that, under other circumstances, would to a certainty have been lost.

I am well aware of the objections which may be raised against this advice; that it may be said that, since the diagnosis of any given case is uncertain, the treatment of it should not be heroic; and likewise that, since many cases, which appeared to be hopeless, have recovered without operation, the surgeon is not justified in submitting his patient to an operative ordeal. I can only answer to the first of these objections, that an operation is only suggested in cases in which symptoms of acute intestinal strangulation, similar to those of an acute external hernia, are present, and that, under such circumstances, an exploratory operation for investigation, as well as for relief, is not only justifiable, but absolutely demanded. In the one case, as in the other, the object of the operation is first to find, and then to remove, the cause of strangulation.

With respect to the second objection, I would say that it is well known that, in cases of strangulated hernia, recovery sometimes takes place without operation; but that no prudent surgeon, on that account, would use such cases as an argument against operative interference. An operation in a case of strangulated hernia may not be absolutely necessary; nevertheless it is the surgeon's duty to propose it. With a like object, I hold that, with symptoms of acute intestinal strangulation, though recovery may possibly take place by natural processes without operation, there is every probability against such a result being brought about. Under these circumstances, therefore, I hold that an exploratory operation is not only justifiable, but right. By the general adoption of this practice, I feel convinced that more lives would be saved than by the expectant principle which now too generally predominates.

The following brief notes (extracted from my note-book) of cases in which relief could have been afforded by operation support this view. They are taken at random, and are only a few out of many that I could adduce.

Case iv.—James H., aged 46, who had been ruptured two years, was admitted in 1869, with symptoms of acute strangulation of two days' standing. The hernia was explored, but nothing was found, and the man died unrelieved on the thirteenth day. After death, a band

was found fastening two feet of the ileum to the psoas muscle. This band could have been divided.

CASE V.—A man, John P., aged 46, was admitted, in 1870, with symptoms of intestinal strangulation of nine days' standing, and died unrelieved. After death, a loop of ileum was found strangulated by the arching of the appendix cæci from its origin to its termination, which was attached to the promontory of the sacrum. This could have been released.

CASE VI.—A boy, William B., aged 15, was admitted, in 1871, with intestinal strangulation of twelve days' standing, and died unrelieved. After death, two feet of ileum, of a purple colour, were found in the right iliac fossa, embraced by a band of lymph springing from a diverticulum, given off from the ileum twenty-four inches above the cæcum, and attached at its other end to the base of the diverticulum, thus forming a complete loop, which could have been divided.

CASE VII. *Intestinal Strangulation: Laparotomy: Double Band, one divided.*—Frances C., aged 41, was admitted, under the care of Mr. Bryant, on January 19th, 1873. Four days previously, when carrying a bundle of wood, she felt something inside snap and give away. She had sudden pain and vomiting, which persisted, and became fæcal the day before admission. When admitted, she had a femoral hernia on the right side, with abdominal distension, nausea, and vomiting. On the same day, the abdomen was opened, and an omental band divided, but without success, as the patient died in twelve hours. At the *post mortem* inspection (18), the edges of the incision and the omentum, with the parts beneath, were glued together by lymph. All the coils of intestine were likewise glued together. A coil of strangulated bowel, three inches from the cæcum, was found in the pelvis, pressed upon by a band other than the one divided at the operation, passing from the broad ligament to the mesentery on the right side of the pelvis. A firm adhesion between the ovary and the omentum had been divided in the operation. If this second band had not existed, a successful result might have been recorded.

CASE VIII.—A man, William M., aged 58, came into Guy's Hospital in 1873, with every symptom of acute intestinal strangulation, and a swelling in his right iliac fossa. On the seventeenth day, his abdomen was explored, a band found and divided. The intestine, however, had ruptured. After death, the cause of the obstruction was clearly traced to a mesenteric band, which had strangulated two feet of ileum. In this case, the verdict of "Too late" might have been recorded.

CASE IX.—*Internal Hernia from Strangulation of the Bowel passing through a Hole in the Omentum.*—James A., aged 61, was admitted on January 11th, 1871. Ten years previously, he had had nausea and vomiting, with swelling of the abdomen. This had disappeared after four or five months, and he had since had good health. On January 8th, three days before admission, at 11 A.M., he was suddenly seized with griping pain in the abdomen. At 6 P.M., he vomited. During the night the pain increased, and the vomiting became persistent. He was admitted on the 11th, with stercoraceous vomiting and central umbilical pain and tenderness. There was more fulness on the right

than the left side. The pulse was 120, thready. He was ordered one grain of opium every four hours, and temporary starvation. There was no vomiting afterwards, and he slept. He sank on the 14th, death being preceded by black vomiting. At the necropsy (15), the lungs were found engorged. On opening the abdomen, wide coils of small intestine were alone visible. The colon was shrunken; the omentum was strained down tightly towards the right border of the pelvis, and appeared braced down around the end of the ileum. The lower three feet of the ileum were black, and placed in the recto-vesical pouch. These had passed through a hole, one inch in diameter, in the lower edge of the omentum. The bowel could be withdrawn from this with the utmost ease (as Dr. Moxon, who made the examination, reported). Above the constriction, the bowel was upwards of five inches in circumference; below that point, it was very small. The liver was small, and weighed only 40 ounces. The kidneys were healthy. In this case, relief could certainly have been given by an operation.

Case x.—A man, Robert W., aged 30, nine days before his admission in 1871, was seized with sudden abdominal pain and vomiting, associated with constipation, and followed by collapse. He died, and after death the duodenum was found to have been constricted by a band of lymph attached to the colon above the sigmoid flexure. This could have been divided.

Case xi.—A man, John W., aged 34, was admitted, in 1882, with an inguinal hernia of eight years' standing, and symptoms of acute intestinal strangulation. The hernial swelling was tense, and the man collapsed. The hernia was reduced, and the man next day vomited blood, and passed blood and fæces. He soon died. After death, a narrow cord, three inches long, was found extending to the cæcum, over which the last four feet of gangrenous ileum were suspended and strangulated. The cord apparently consisted of a couple of obliterated vessels. This cord could have been divided.

Case xii.—Samuel B., aged 60, was admitted on October 8th, 1881. He had been quite well until October 3rd, when, in walking, he felt sudden pain across the abdomen. Vomiting followed, and increased. Five days later he was admitted into Guy's Hospital, with not much abdominal distension. Right colotomy was performed, and the bowel was found to be empty. After death from peritonitis, coils of intestine were found moderately distended, being from an inch and a half to two inches in diameter. A contracted coil existed in the right iliac region, constricted by a ring of omentum, which, on further examination, proved to be formed by a hole in it. Eight inches of bowel were incarcerated, two feet from the cæcum.

I have thus given you nine cases of internal strangulation of the bowel, all of which could have been relieved, and possibly cured, had the rule of practice I am now advocating been carried out. In several of the cases in which the operation was performed, failure followed, from the measure having been applied too late. May the future record be more satisfactory!

Case xiii.—I must now, however, give you the brief records of a successful example which I published in full, in 1867, in the *Transactions of the Royal Medical and Chirurgical Society*, vol. l, p. 65. It occurred

in the person of a gentleman aged 51, who had had a right inguinal hernia for twenty-five years, for which he had worn a truss. The hernia had only given him trouble once, six months previously. Three days before I saw him with Dr. Wilkinson of Sydenham, during some violent exertion, the hernia partially descended, but it was at once readily reduced. Vomiting soon followed its reduction, with pain on the right of his umbilicus; and both symptoms became worse. On the third day, the vomiting was fæcal. No hernia could be felt; and there was no fulness at the internal ring, and not even tenderness on deep pressure. His abdomen was fuller than natural; and there was a fixed pain, increased in paroxysms, on the right side of the umbilicus. No other hernia existed. An exploratory operation was at once suggested, and performed at the site of the old hernia; and, when nothing was found at the part, the excision was extended upwards along the semilunar line for about two inches. A band was then felt with the finger within the abdomen, which was divided by means of a pair of scissors, and a rapid recovery took place. The patient is now alive.

I could add many cases of what is known as displaced hernia, to demonstrate the value of the practice I am encouraging; for such may rightly be called internal hernia. But surgeons are all agreed upon the necessity of an exploratory abdominal operation in these cases—first to discover, and secondly to relieve, the cause of strangulation.

I will now pass on to consider how it is that death results from what is known as intussusception, and by what means life may be saved or prolonged in that condition. I find that in the necropsies of twenty cases, of which I have notes, ten being males, and ten females, death usually occurred from either gangrene of the entering and returning layers, or perforation by ulceration of the receiving or external gangrene of the intussuscepted portion, as has been already explained in the cases of internal strangulation, being brought about by the obstruction to its venous circulation. When the obstruction is sudden and complete, the symptoms will be acute, as in a case of strangulated hernia. When it is slow or incomplete, the symptoms, as well as the pathological changes, will be chronic; and, under the latter circumstances, inflammatory changes will have much to do with the pathology of the affection. Under all circumstances, whether in the acute or chronic form of intussusception, inflammatory changes take place in the outside or receiving layer, from which the pathological records of Guy's Hospital reveal the fact that perforation or ulceration of the bowel occurs.

In acute cases of intussusception, therefore, the pathological eye of the clinical physician should see more or less complete blood-stasis of the intussuscepted bowel, with inflammation and ulceration of the outside or receiving layer; and in the chronic cases the same pathological eye should see like changes, but of a more chronic form. In the one, as in the other, the changes are certain, though they vary, somewhat, in the speed with which they are bro but to the surgeon they suggest decision, and not following cases illustrate these points.

CASE XIV. *Intussusception of Ileum; Sloughing; Acute Peritonitis.*—Mary K., aged 49, was admitted into Guy's Hospital on December 31st, 1879, and died on January 9th, 1880. Three months previously she had begun to feel pain in the abdomen, which at the same time commenced to increase in size. Nothing had relieved her. When admitted, she had loss of appetite, but neither nausea nor vomiting. The abdomen was large, and flabby, but not distended. At times she felt great pain, when lumps were felt travelling about the abdomen; there was also a gurgling of fluid therein. The bowels were acting about five times a day. On January 7th the abdomen was larger, and the pain in it more constant. A streak of blood also appeared in one motion. On January 9th she died. Six hours before death the pain was intense. At the necropsy (17), acute peritonitis was found, with lymph all over the distended intestines. A foot above the ileo-cæcal valve, the distension suddenly ceased. The lower end of the ileum, the cæcum, and colon, were empty and healthy. At one spot the bowel seemed to be crossed by a band, and to be sloughing; but, on examination, it was seen that this apparent band was the collar of an intussusception, and that the receiving layer, at its upper part, was sloughing, and perforated by several holes. The intussuscepted mass was about four inches long; it was flaccid, free from swelling, but of dark colour, and probably sloughing.

CASE XV. *Intussusception of Ileum into Colon; Perforation of the Bowel by Ulceration at the Neck of the Entering Layer; Peritonitis.*—Catherine McL., aged 5 months, was admitted on May 11th, 1874, and died on the 19th, the twelfth day of her illness. She had been well until four days before admission, when she was seized with pains and retching in paroxysms of fifteen minutes. She was quiet during the intervals. This condition of things lasted for five days, when the pain ceased for a few hours; but it returned next day. She passed blood *per anum* on the first day of her illness, and two days later, but not afterwards. The abdomen was hard on palpation, but resonant; no tumour was to be felt. The bowels were opened three times; the motions were of a natural colour. On May 19th, she was much worse, and sank, the abdomen being tense. At the necropsy (174), the abdomen was found to be distended; no lump was to be made out. The peritoneum was pink. Semifluid fæces were spread over the intestines. The transverse and descending colon were distended with the intussuscepted cæcum and ileum. The ileum was perforated; attempts to reduce the intussusception caused complete laceration of the bowel where perforated.

In some cases, as in three of the twenty now being noticed, the bowel below the seat of intussusception was ruptured from the inflation employed to assist the return of the invaginated bowel; whilst, in another case, the child collapsed rapidly after inflation. Under all circumstances, therefore, the treatment by inflation is hazardous and dangerous, although success in exceptional cases may be recorded. I have before me the notes of three cases in which this treatment seemed to be successful. In acute cases, it is hardly applicable, since the strangulation of the intussuscepted bowel seems to require as active treatment as an acute strangulated congenital hernia. In the more

chronic cases, such as in severity seem to be parallel with cases of obstructed or incarcerated hernia, running on to strangulation, inflation may be justifiable, and even successful; but then it must be employed in the early days of symptoms, that is, within the first three days; later on, changes in the bowel are almost certain to have taken place, which would render the treatment by inflation or injection fruitless, and probably dangerous.

Under such circumstances, the treatment of intussusception by laparotomy seems not only expedient, but right; but it should be undertaken early, that is, on the formation of the diagnosis in acute cases, and in the more chronic on the failure of inflation employed within the first three days. When delay has taken place, and the probabilities of success following the operation of laparotomy are small, Nélaton's operation of enterotomy seems to suggest itself, that is, the formation of an artificial anus above the seat of obstruction; since by this operation relief is afforded to immediate symptoms, and time given for the pathological changes that follow sloughing and ulceration of the intussuscepted bowel to complete themselves in a satisfactory way.

The treatment of an acute intussusception by opium alone is as delusive as is the treatment of an acutely strangulated hernia or intestine by the same means; while the treatment of an intussusception by inflation is, as already explained, dangerous, although sometimes successful. To support this view, the following cases may be recorded.

CASE XVI.—Harry M., a boy, seven months old, was admitted into Guy's Hospital on January 11th, 1880, with every symptom of intussusception, and the presence of a tumour in his left hypogastric region. The bowel was inflated, and it was thought the tumour had disappeared. The next day, however, the tumour was as large as ever, and an operation was entertained; it was not, however, carried out, as, after the administration of chloroform, no tumour could be felt. The child died on the fifth day; and after death three inches of the ileum, with the cæcum, were found intussuscepted into the colon. The bowel between the intussuscepted portion and the sigmoid flexure, was partially ruptured in many places. The peritoneal covering was cracked and turned out, and in the sacculi the longitudinal muscular fibres were torn and the transverse separated. There was also general peritonitis.

CASE XVII.—*Ileo-cæcal Intussusception; Inflation; Rupture of the Peritoneal Coat; Extravasation; Peritonitis.*—The next case was also in a male infant. Alfred A., aged six months, was admitted into Guy's Hospital on November 23rd, 1873. The patient had been suckled entirely up to November 22nd, when it was not so cheerful as usual. During that day he was sick, and was in pain during the night. On November 23rd blood was noticed on his napkin, but there was no straining at stool. The bowels had acted on the 22nd. On admission, the child looked very ill. A tumour could be felt in the abdomen, of the size of a pigeon's egg, just above and to the left of the navel. The napkin was blood-stained. At 4.30 p.m. oil was injected into the bowel, but was rejected at once by straining. Chloroform was then given,

and inflation tried, without benefit. The tumour became larger. Vomiting continued. Oil was again injected, but again without benefit. Next day the tumour could still be felt. Inflation was repeated. Suddenly the abdomen became generally distended; no air escaped *per rectum*. The child became almost pulseless. The abdomen was punctured, and air escaped. The child died. At the *post mortem* examination (383), the peritoneal cavity contained a pea-soupy kind of material, evidently from the intestines. The descending colon was dilated into a horse-shoe shaped coil which occupied the loin. The left half of the transverse colon and the splenic flexure were constricted and perforated. A second opening was found, lower down the bowel, in the horse-shoe dilatation of the sigmoid flexure. The right half of the transverse and the ascending colon were discoloured, of a purple tint, and within this portion of the bowel was the ileum with the cæcum. This included part could not be drawn out wholly. The mother of this patient had lost another child, six months old, eighteen months previously, also from an intussusception.

CASE XVIII.—*Intussusception; Inflation and Injection; Ruptured Peritoneal Coat of Bowel.*—The following are the notes of a third case. Mary W., aged 7 months, was admitted on June 11th, 1871, and died six days afterwards. On the day of admission, when the girl was quite well, the bowels acted at 7 A.M., and soon afterwards blood passed, and she vomited. She was admitted at 5.15 P.M., with vomiting, tender abdomen, and paroxysms of pain, as indicated by sudden screams. A tumour, about two inches long, was then felt in the left hypogastric region. Blood passed with every motion, and there was much straining. Inflation was employed, and, it was thought, with benefit. On the 12th, injections were used, without advantage. On the 13th, the symptoms continued. An operation was proposed, but, on chloroform being given, the tumour could not be felt. On the 15th, the child was sinking. She died on the 16th. At the necropsy, suction-lines were present; an intussusception, three inches long, was found in the middle of the epigastric region. The cæcum and ascending colon had disappeared into the transverse colon. This was partially burst in many places, its peritoneum cracked and folded back, the torn edges now being agglutinated. The cracks were in a series, thus, § § § § § §. There were no signs of peritonitis in consequence of the injury. The constricted, or rather invaginated, part was of a deep purplish colour, and marked off by healthy lines from the other. The interior was ulcerated, particularly at the line of constriction at the point of entrance. The viscera were healthy. An early operation should have been performed.

CASE XIX. *Ileo-cæcal Intussusception; Inflation of Bowel; Collapse of Patient; Peritonitis.*—W. F., aged 7 months, was admitted into Guy's Hospital on December 5th, 1878. He had had pain in his abdomen since his birth. On November 28th, after taking the breast, he seemed in great pain, and his mother gave him some linseed-tea. He had also difficult respiration. Some congealed blood was afterwards passed *per anum*. On the 30th, castor-oil was given. On December 1st, he still passed blood, and on December 2nd vomited. He was then brought to the hospital, when an abdominal tumour was

felt, and his admission advised. This was not done, however, until the 5th, when the vomiting became fæcal. The intussusception was felt *per anum*. The bowel was inflated, and the boy became collapsed, and convulsed, and died. At the necropsy (463), when the abdomen was opened, the injection-lines of peritonitis were visible. The small intestines were only moderately dilated. On removal of the small intestines, the cæcal and right colic region was found empty, also the region of the transverse colon. The whole of those parts were found in the left colic region to the left of the spine. The mass was felt in the rectum, and the finger could be, from the anus, introduced into the ileo-cæcal valve. Inflation, manipulation, and pressure, failed to reduce the intussusception. There was no adhesion between the peritoneal surfaces of the bowel, the mucous membrane of which was sloughing, particularly near the valve. Much blood was extravasated into the intestinal coats. The viscera were healthy.

Might I ask, could the operation of laparotomy have been more fatal in these cases than that of inflation proved? Might it not, with a great probability, if employed early, have been more successful?

As to the causes of an intussusception, there may be some difficulty in finding a satisfactory explanation. Some local irritation is the most probable, but, in exceptional cases, the presence of a polypus will suffice. The attempt of the bowel to expel the foreign body in this case being enough to induce an invagination of the bowel. I can quote a case illustrating this fact, and likewise a second, in which the affection was due to an intussusception of a diverticulum of the ileum.

Case xx.—*Polypoid Tumour of the Ileum; Intussusception; Acute Peritonitis.*—H. K., aged 42, was admitted on February 3rd, 1879, into Guy's Hospital, under the care of Dr. Moxon, and died on March 7th. She had had pain in the right side of the abdomen six months previously, aggravated by respiration. She had lain up for three months, and having convalesced, went about for three weeks, when pain appeared at the umbilicus, which was not increased after taking food. She kept about for three weeks, when she was compelled to take to her bed. She then had diarrhœa, without much pain or tenesmus, and for three weeks had vomiting, which, latterly, had been extreme. When admitted, she had an anxious face, and was very thin. There was pain at the umbilicus, and upwards along the sternum, and across the epigastrium. On February 5th, the bowels were opened, and the motion was natural. She had no vomiting. On the 8th, she vomited after eating bread and butter. On the 11th, the pain was constant; the bowels were opened naturally; there was no mucus in the motion. On the 14th, the pain was constant, but aggravated in paroxysms, with vomiting. On the 18th, compound colocynth pill was given, which operated quickly, and diarrhœa set in, which lasted until the 22nd. On March 7th, at 8 A.M., sudden intense pain arose, followed in one hour by vomiting. Morphia-injections and poultices relieved the pain, but the patient was collapsed at 2, and died at 5 P.M. A *post mortem* examination was made (88). The peritoneum contained much thin, purulent fluid, and one coil of bowel looked of a yellow colour. Many coils were greatly distended. After removal, when laid

open, they measured five inches and a half. Below the umbilicus, an intussusception was seen of the small intestine, two or three feet above the cæcum. On this being laid open, it was found that the lower end of the intussuscepted mass had a solid tumour hanging from it by a short thick pedicle. It was of the shape of a chesnut, of a dark purple colour. No adhesions had occurred between the entering and returning layers of the intussuscepted part, which were greatly congested for about two feet. The polypoid tumour was made up of fibrous tissue.

CASE XXI. *Intussusception of Diverticulum Ilei; Peritonitis; Laparotomy.*—James C., aged 22, was admitted on July 24th, 1874; laparotomy was performed on the 25th; he died on the 27th. He had been healthy until four days before admission, when, after eating fish, he had abdominal pain and vomiting, which became worse, and his bowels ceased to act. When admitted, he was vomiting a brown fluid, the abdomen was tender, but not tympanitic. The urine was scanty; temperature 99°; pulse 140. There was no tumour to be felt. On the 25th Mr. Davies-Colley opened the abdomen, under the carbolic spray; and, after twenty minutes' search, found an intussusception, which he drew out. A copious motion followed, but the patient sank. At the necropsy (273) the peritoneum was injected. The small intestines were distended. At the distance of 2½ feet from the cæcum was a diverticulum; the intestine at the part was flaccid and congested. The tip of the diverticulum was still invaginated; and there was no doubt that the invagination of the diverticulum had been the cause of the intussusception, by acting as a polypus.

CASE XXII.—A man, aged 44, came into Guy's Hospital in 1877, with symptoms of peritonitis following obstruction. He died, and at the *post mortem* examination, an intussusception of the rectum was found, due to the forcing down, by the bowel, of a mass of colloid cancer, attached to the end of the entering portion.

The process by which such intussusception is formed is the same as that which expels a rectal polypus through the anus, and likewise gives rise to prolapsus recti.

By way of conclusion, I would lay down the following as rules of practice.

1. Laparotomy should be undertaken as soon as the diagnosis of acute intestinal strangulation is made. There should be no delay allowed for the formation of a specific diagnosis of its cause. It should likewise be proposed in all cases of acute intussusception, and of chronic, which have failed within three, or, at the most, four days, to be relieved by other treatment.

2. In all operations of laparotomy, it is to the cæcum that the surgeon should first advance, since it is from it he will obtain his best guide. If this be distended, he will at once know that the cause of obstruction is below; if it be found collapsed, or not tense, the obstruction must be above. Adhesions or bands, are, moreover, more frequently near to, or associated with, the cæcum, than with any other part of the intestinal tract. It is also in the right iliac fossa that the collapsed small intestine, in cases of acute strangulation, is usually to be found; and, with this as a starting point, the surgeon will have less difficulty in tracing up the intestine to the seat of strangulation

than if he begins at a distended coil, when it will be a matter of chance whether he travels away from or towards the special object of his search—the seat of obstruction.

3. In a laparotomy, when the strangulated coil of bowel is gangrenous, it should be brought out of the wound, and the gangrenous knuckle resected. The proximal and distal ends of the resected bowel should then be stitched to the edges of the wound, and an artificial anus established.

4. Nélaton's operation of enterotomy should be undertaken in all cases of intestinal strangulation, when laparotomy is rejected or seems inapplicable, as well as in cases of intussusception in which the invaginated bowel cannot readily be released. It should be performed in the right groin, or, rather, right iliac fossa.

5. If laparotomy succeed, the cause which called for it is removed, and the normal action of the bowel is restored. If resorted to early, and as a rule of practice, it is probable that it would be more successful than the treatment, by opium, inflation, or purgatives, which has hitherto been in vogue.

LECTURE II.

On the Mode of Death in Intestinal Obstruction, and its Treatment.

I discussed, in my former lecture, the subject of intestinal strangulation; and I hope I well justified in your judgment, my separation of it from the class of cases with which hitherto it has been associated, namely, that of intestinal obstruction. I trust, moreover, that I made it clear to you that, when a patient dies from intestinal strangulation, his death is not caused by the obstruction, although obstruction may have been one of its symptoms, but from changes brought about in the intestine itself, due to its strangulation.

In my present lecture, the subject of intestinal obstruction will occupy our attention; and, more particularly, the way in which it destroys life. I shall show you what changes the intestine undergoes as a result of obstruction, and how these changes tend to kill. I shall then go back, and consider what affections lead up to obstruction, and subsequently point out the indications for the treatment of its different varieties.

And, first of all, one may ask, "How does obstruction of the intestines destroy life?" "What changes does it bring about in the bowels which tend towards death?" As an answer to these questions, it may be said, by way of summary, that a simple obstruction may destroy life, either by bringing about exhaustion due to the inability of the patient to take or retain food, the consequence of vomiting; or by peritonitis, the result of back-pressure upon the bowel above the seat of obstruction, if not more directly occasioned by sloughing, rupture, or ulceration of the cæcum or colon, the consequence of overdistension. When obstruction is the result of ulceration, cancerous or otherwise, the disease which causes it may help to bring about a fatal result; but the changes in the bowel above the seat of obstruction are the main cause of death when these cases are left to take their natural course.

I will now proceed to prove the truth of these views. The best examples of death from pure obstruction are those due to congenital malformations of the rectum. And of these I can quote one case which ran its natural course, and in which death occurred on the fifth day, from peritonitis (Case XXIII); three others, in which operative relief had been ineffectually made, in two cases of my own by enterotomy, and in the third by a perineal incision. In none of these instances, however, was success achieved, on account of previous peritoneal changes. I should also quote a fifth case, in which a man,

aged 26, died from obstruction, the result of the contraction of an artificial opening made into an imperforate rectum in infancy. In this case, the man died, under my care, from exhaustion and peritonitis; and at the *post mortem* examination (Hospital *P. M.* Inspection-Book, No. 226, 1874), the rectum above the seat of obstruction was found to occupy half the abdominal cavity. It measured 13 inches in length, and 11 inches in circumference. The walls were of three times their natural thickness. I have given a drawing of this case in my book on the *Practice of Surgery*. In all these cases, however, death was due to the obstruction, and peritonitis as a consequence.

CASE XXIII. *Imperforate Rectum: Death on the Fifth Day from Peritonitis.*—T. S., aged 4 days, was admitted into Guy's Hospital on November 24th, 1875, and died on the following day. The infant had been born on the 20th, and had never had an action of the bowels. When brought to Guy's Hospital, he was dying with peritonitis. An anus existed, and a short tube, which ended in a blind pouch. At the necropsy (469) the peritonitis was general. The whole of the large intestine, as far as the rectum, was normal in position and relations. The rectum ended in a blind pouch, which was separated by a quarter of an inch of fibrous tissue from another blind pouch, that represented the lower end of the rectum.

CASE XXIV. *Malformation of the Rectum; Enterotomy on the Right Side.*—A boy, aged 7 days, was admitted under my care on March 22nd, 1880. The anus was found to end in a *cul-de-sac*, not half an inch from the orifice. Enterotomy was performed in the right iliac fossa. The vermiform appendix appeared through the wound, and was cut off. The bowel was opened at the part, and stitched to the margins of the wound. The baby died next day. At the *post mortem* inspection (134) the large intestine was seen to form a rounded pouch in the middle line in front of the sacrum, which projected down into the pelvis, where it ended. The right side had been laid open in the operation; its walls were thickened. The cæcal appendix had been cut off near the cæcum. (Preparation in Guy's Hospital Museum, No. 1881, 40.)

CASE XXV. *Imperforate Rectum: Hypospadias: Enterotomy: Peritonitis.*—J. D., aged 12 days, was admitted into hospital on December 11th, 1876, under my care, and died on the 19th. He had an imperforate rectum, an anal *cul-de-sac*, and hypospadias. The bowel was opened in the right iliac fossa, an anal operation having failed, and the child died eight days later. The necropsy (496) revealed acute general peritonitis. The artificial anus opened into the cæcum; the ileo-cæcal valve protruded. The coats of the large intestine were thickened. The rectum formed a pouch in the pelvis, and almost filled the pelvic cavity. There was an anal *cul-de-sac* in front of the pouch, with peritoneum between them.

CASE XXVI. *Imperforate Anus: Operation.*—Eliza C., one week old, was admitted into the hospital with obstinate vomiting and imperforate anus. The abdomen was distended. A perineal incision was made, the bowel opened, and stitched to the skin. Death occurred thirty-six hours afterwards. At the necropsy, no abnormality was found in the abdomen, except that the sigmoid flexure was very large

and thick, and coiled over into the right inguinal region, whence it descended into the pelvis, but it had no external outlet. In this case, had right inguinal enterotomy been performed, as in the two former cases, the sigmoid flexure would have been opened. These three cases, therefore, support the suggestion and practice of opening the bowel in the right inguinal region in congenital malformations of the anus and rectum, since, by such an operation, either the cæcum or the sigmoid flexure will thereby be opened. I regard this measure as being far preferable to left lumbar colotomy in cases of congenital malformation, and preferable likewise to any blind incision or puncture into the pelvis from an anal *cul-de-sac*.

Again, death may take place from simple fæcal impaction; and it is well to remember that this condition may give rise to conditions which may simulate other forms of rectal obstruction. On this account, a careful digital rectal examination should be insisted upon by all practitioners, in cases in which signs or symptoms of obstruction do not yield readily to ordinary means. I have before me the notes of two cases in which death actually took place as a direct consequence of fæcal obstruction. They are as follows. One was a woman, aged 22 ; the other a child, aged 7 months. The former died from exhaustion ; the latter from peritonitis.

CASE XXVII. *Intestinal Obstruction from Fæces.*—Caroline V., aged 22, was admitted into Guy's Hospital on September 3rd, 1870, and died on September 15th. On August 22nd, she had been seized with pain in the bowels and limbs. She had constipation, and took aperients with some effect. There had been no action afterwards; that is, for eleven days. When she was admitted, the abdomen was flat and flaccid, but not tender. She vomited after taking food. The rectum was empty. Subsequently a tumour was discovered to the right of the umbilicus, and later a hard cord on the left side of the abdomen. Then the rectum contained fæces, and an injection brought some away. The day before death, another injection was given, and seven pints of liquid were thrown up, after which much fæcal matter came away. She was afterwards collapsed. The bowels acted again ; the patient became convulsed, and died. For some days before death, she lay on her right side, complained of great weakness, and could not turn in bed without help. One day she had retention of urine, and a catheter was passed. At the necropsy (196), made six hours after death, the medulla of the cord appeared soft in the middle of the dorsal region. Opposite the upper dorsal vertebræ the grey matter was not distinct, and on the left side it was hollowed out into a cavity. No granule-masses were subsequently discovered. The right lung was hard and airless ; the left lung healthy. The intestines were healthy and pale ; the small intestine was contracted; the cæcum large and floating ; the transverse colon contracted; the splenic flexure distended; the descending colon contracted ; the sigmoid flexure contained hard masses, which could be cut with a knife. The liver was healthy. There was no disease anywhere except in the spinal cord.

CASE XXVIII. *Constipation : Peritonitis : Slight Ulceration of the Large Intestine : Contraction around Impacted Fæces.*—Flora G., aged 7 months, was admitted into Guy's Hospital on October 22nd, 1875 and died on October 27th. She had had constipation since birth ; and the

bowels had acted for the first time six days after birth. She was admitted with constipation and extreme distension of the abdomen. The rectum was examined, and a small os-uteri-like opening felt with the finger. This was thought to be an intussusception; and an injection was used, but without effect. At the necropsy (416) the abdomen was found to be immensely distended, except in the loins. The intestines were distended, dry, and injected; there was no lymph upon their surface. The large intestines were enormously distended, the cæcum and sigmoid flexure forming large prominences in either flank. A mass of hardened fæces was found in the sigmoid flexure, completely blocking up the bowel, which was collapsed below. This child clearly died from constipation.

I will now pass on to demonstrate how by obstruction from any cause the cæcum or colon may slough, rupture, or ulcerate, as a direct result of pressure backwards. Indeed, this complication is the most common consequence of chronic obstruction from any cause, and as a cause of death is to be counted as the most frequent. It is the general exciter of peritonitis in all cases of obstruction, and is too often the cause of death after colotomy, the operation having been performed "too late." I have before me the notes of twelve cases of stricture of the rectum in which one or other of these complications was the direct cause of death, and the records of many others in which ulceration of the cæcum, or colon, due to distensive pressure, was found.

I will give you the headings of some of these cases.

Case xxix.—A woman, aged 54, admitted with cancerous stricture of the rectum, died from peritonitis in 1879 (necropsy 444), due to gangrene of the transverse and descending colon.

Case xxx.—A man, aged 61, with cancerous stricture of the descending colon, died with peritonitis in 1883 (necropsy 71) from a sloughing cæcum, which was found, after death, distended and perforated.

Case xxxi.—A man, aged 35, with cancerous rectal stricture, died in 1881 (necropsy 85), with his cæcum enormously distended, occupying one-third of the abdomen; the colon was also greatly swollen. The cæcum and colon had each a patch of slough on their walls.

Case xxxii.—A woman, aged 52, admitted with cancerous rectal stricture, died from peritonitis in 1878 (necropsy 472); and, after death, when the abdomen was opened, the large intestine was seen to be dilated to the size of a woman's arm. The cæcum projected forwards; the transverse colon arched downwards. The coats of the bowel were intensely injected and ecchymosed.

Case xxxiii.—A woman, aged 58, admitted with epithelioma of the rectum, died from exhaustion and vomiting in 1878 (necropsy 424). After death, fæcal extravasation was found into the peritoneal cavity in all directions, the fæces having escaped from a ruptured cæcum.

Case xxxiv.—A woman, aged 79, with cancer of the rectum, sank in 1871 (necropsy 265). After death, the large intestines were much distended. Near the cæcum, the walls of the bowel had sloughed.

Case xxxv.—A man, aged 40, admitted with cancer of the sigmoid flexure, died from acute peritonitis in 1870 (necropsy 146). After death, at the *post mortem* inspection, gas escaped from the peritoneal cavity. The colon was greatly distended, and had ruptured.

CASE XXXVI.—A man, aged 56, died with intestinal symptoms and peritonitis in 1874 (necropsy 295). After death, a rent in the transverse colon, three-fourths of an inch long, was found some thirteen inches above a mass of obstructive disease in the splenic flexure. From this rent, fæces had escaped.

These brief notes of cases, not to mention many others that might be quoted, are enough to demonstrate the fact that, with rectal obstruction, from whatever cause, the distending pressure in the bowel above, caused by the accumulating motion, together with the ineffectual efforts of the intestine to urge on its contents, is prone to be followed by ulceration, sloughing, and perforation of the distended bowel. In some cases, it is the cæcum that suffers; in others, the colon; but in all cases the risk is run, that, from overdistension or ulceration, some perforation of the walls of the bowel will take place, and with it death. I would, therefore, ask all my medical friends, in cases of chronic obstruction, to have the probability of this change before them, and not to allow time to pass by unnecessarily, when relief to the overloaded bowel can be afforded. The trouble demonstrated will come sooner or later, and it is well to make provision against it by surgical means as soon as medical measures have been proved insufficient; the practice of prevention being as valuable in the treatment of cases of intestinal obstruction as it is known to be in those of intestinal strangulation.

Having dwelt upon the changes found in the portion of bowel above the seat of obstruction which may justly be attributed to that condition, I propose now to consider what the obstruction itself may be. And, putting aside the mechanical obstruction of tumours placed outside the bowel, most other causes must be classed amongst the ulcers, which may be subdivided into the simple, syphilitic, and cancerous. I would wish here to emphasise strongly the fact that ulcerations of the rectum and sigmoid flexure, which lead on to stricture, are not all cancerous; that many are simple, or of the dysenteric type; whilst some are syphilitic. Thus, at Guy's Hospital, out of 49 consecutive cases of stricture of the bowel examined on the *post mortem* table, 13 were registered by the able pathologists of that institution as being of a simple character, 2 of syphilitic origin, and 34 as cancerous; or, in rough numbers, one out of every three cases has its origin in a disease other than cancer. All, however, eventually lead to obstruction, many to a narrow stricture, and some tend to occlusion.

That one-third of the cases of stricture of the rectum or lower bowel are not cancerous, is an important practical point to recognise; since it suggests the possibility of saving life if the evil effects of obstruction can be neutralised or done away with; whereas, with cancerous stricture, the best that can be promised, as a rule, is a prolongation of life from two up to six years. I have reason to believe, however, that these facts are not sufficiently recognised; consequently, I propose to support my assertion by quoting some cases of simple and syphilitic stricture; and, to make the diagnosis sure, I shall again quote from the Guy's Hospital *post mortem* records.

CASE XXXVII. *Ulceration and Stricture of Rectum: Ulceration of Vagina: Suppuration of Ovarian Cyst: Peritonitis.*—Harriet C.,

aged 30, was admitted February 19th, 1869, and died on February 26th. She came from Guildford, and was thought to have syphilis, but no history of syphilis could be obtained. She had had difficult defæcation for five years, with passage of blood. The rectum was found strictured for 2½ inches by a fibrous band; it admitted the tip of the index-finger; the sphincter was relaxed. Below the stricture, the mucous membrane could be felt rough, and the surgeon thought it to be cancerous. Bougies were passed. On February 25th, peritonitis supervened. At the inspection (necropsy 63) the lungs were found healthy. There was acute peritonitis, and a suppurating ovarian cyst, of the size of a walnut. The rectum at its last four inches was deeply and extensively ulcerated all around. There were small remains of the mucous membrane. The base of the ulceration was formed by muscle and fat. The tissues outside were not much indurated. There were no signs of growth of any kind.

Case xxxviii. *Ulceration of the Rectum: Fatty Liver.*—Charles H., aged 38, was admitted July 24th, 1875, and died on September 27th. He had had rectal disease for more than a year; had never been abroad. He was admitted for stricture of the rectum; was passing blood and mucus: and had not had syphilis. He died exhausted. At the necropsy (No. 365) the intestine was healthy from above downwards until the middle of the transverse colon was reached, when the mucous membrane was ulcerated. The ulcer simulated an old cutaneous ulcer, which had healed, and then opened again. This ulceration extended into the rectum, and down to the anus. It was of a simple character.

Case xxxix. *Phthisis: Lardaceous Viscera: Simple Ulceration of the Rectum.*—Jane E., aged 25, was admitted on December 30th, 1882, and died on February 14th, 1883, of phthisis of two years' standing. She had stricture of the rectum, but no syphilis. At the necropsy (No. 62), the cæcum and colon were both healthy. For five inches above the anus there was superficial ulceration, not extending beneath the mucous membrane. Its surface was pale. For three inches upwards, the bowel was contracted to half its normal size. The walls here were slightly thickened. There was phthisis; and the viscera were lardaceous.

Case xl. *Chronic Ulceration of the Rectum: Acute Inflammation and Ulceration of the Large and Lower Part of the Small Intestine.*—J. J., aged 27, was admitted on October 13th, 1871, and died on the following day. When admitted, he was almost dying. For four years he had had attacks of diarrhœa, with vomiting and abdominal pain. He had also piles, or, at any rate, a protruding œdematous mass at the anus. There was intense abdominal tenderness, but not distension. The legs were drawn up. He died in the course of a few hours. At the *post mortem* inspection (No. 308), the rectum, for six or eight inches from the anus, was contracted, hypertrophied, and ulcerated. The edge of the ulceration was sharply defined above, with a raised border. The lower part of the ileum, and the cæcum and colon, were thickened. The mucous membrane was entirely destroyed in the cæcum, and in parts elsewhere.

Case xli. *Stricture of the Rectum (Fibrous): No Evidence of*

Syphilis: Acute Peritonitis.—A. H., aged 27, was admitted in May, 1877, and died on May 5th. At the necropsy (No. 161), there was acute suppurative peritonitis, which had evidently started from the pelvis. The pelvic organs were matted together, and there was much thickening of the pelvic subperitoneal connective tissue. The rectum, in its lower six inches, had its coats greatly thickened, and indurated, with hypertrophy of its muscular fibres. The lining membrane was represented by a smooth cicatricial layer, which was uneven, puckered, and traversed by numerous bands of fibrous tissue. The upper line of the cicatrix was well defined. Two openings led into sinuses lined by membrane, one of which passed towards the right Fallopian tube and bent over the ovary, so that it was at first thought the tract might be the tube. The uterus was virginal; the Fallopian tubes were matted together by inflammatory product. There was no proof of syphilis in the body. The kidneys were soft.

To illustrate the view propounded still further, I propose to show how, after colotomy, these non-cancerous ulcerations heal, though it may be with a narrowing, and, possibly, occlusion of the rectum. I shall quote extracts from the report of those contained in Table III, which I shall bring before you (*vide* page 34). Most of these cases came to me for supposed cancer; but, from their subsequent progress, this diagnosis was evidently wrong. Indeed, the group of cases, taken as a whole, not only demonstrates the fact that extensive simple ulceration of the rectum takes place, and that such leads on to stricture; but that, after colotomy, by which rest to the ulcerating bowel, and the removal of sources of irritation, is guaranteed, the most extensive ulcerations rapidly heal.

Thus, in one case (2), after colotomy, the bowel was very narrow and thickened for some inches. In Case 3, there was ulceration of the rectum for many inches. In Case 4, the patient, a man aged 65, had had, twelve years previously, a recto-vesical fistula, and passed wind with his urine. This ceased of itself, and he remained well for eleven and a half years; that is, till six weeks before his admission, when the symptoms returned, associated with rectal obstruction, and the passage of fæces into his bladder. He was relieved by colotomy, but died on the seventeenth day subsequently; and, after death, there was evidence of old ulceration into the bladder, as indicated by a cicatrix and a large recent fistula, the result of a simple ulceration into the bladder. In Case 5, the rectum and colon had evidently been the seat of chronic inflammation; they were ulcerated and thickened. Indeed, the colon was so friable that it ruptured during the operation. In Case 6, there was a double stricture, and all ulceration had become repaired in the twenty-eight days that followed the operation. One stricture near the anus was three inches in engtth; a second, narrower, was six inches higher up; both were cicatricial, the result of repair after simple ulceration. In Case 8, the bowel had undergone repair, and had contracted during the five months that had elapsed between the operation and death. In Case 9, one of recto-vesical fistula and rectal ulceration; after colotomy, all the ulceration healed, and the fistula remained; but, as no motion had passed down the bowel beyond the lumbar wound since the oper-

ation, performed fourteen years before, the patient was quite comfortable. In this case, the disease was supposed to have been cancerous, which it clearly was not, since the ulcers in the rectum cicatrised soon after colotomy was performed, and left only the urinary rectal fistula. The same occurred in Case 18, in a gentleman, aged 64, who was colotomised for supposed cancer and recto-vesical fistula. He recovered from the operation, and lived in comfort for five and a half years, when he died from a ruptured heart. In him the rectum had completely cicatrised, though the urinary fistula remained, and discharged urine into the bowel. In Case 10, where there had been ulceration of the rectum for years, a rapid cure followed colotomy. When the patient died, nearly three years after the operation, from kidney disease, the rectum had quite healed, but was much contracted. In Case 13, where rectal symptoms had existed for two years, and rapid convalescence followed colotomy, the report, eighteen months later, states that the bowel had healed and almost closed. The same report was added to Case 15, and the patient was alive and well two and a half years after colotomy. These extracts, to which more might be added, are enough to show how the most intractable ulcers of the rectum, not cancerous, heal rapidly after colotomy.

I will now proceed to quote a few undoubted examples of *syphilitic* ulceration of the rectum, and at the same time point to cases 1, 11, 15, 16, and 17, in Table III, as additional evidence.

In Case 1, the repair after colotomy had almost obliterated the rectum from cicatricial bands.

In Case 11, the lower three inches of the rectum had lost its mucous membrane with cicatricial tissue outside.

In Case 15, in which the patient, when last seen, had survived colotomy for four and a half years, the report states that at the end of the second year the bowel had healed and almost closed by cicatricial contraction.

In the other cases, good repair had followed operation.

In some of these cases quoted, as well as in those I am about to quote, I may likewise add that the disease was thought to be cancerous.

Case xlii. *Syphilis: Stricture of the Rectum, and Recto-vaginal Fistula: Colotomy.*—Eliza O., aged 29, was admitted on February 28th, 1872, under my care. Colotomy was performed on March 19th; death occurred on April 1st. She was married, and had had four still-born and two living children. She had been well until four years previously, when, in her last confinement, the child had to be delivered with forceps. She subsequently had a vaginal discharge, and fæces came through the vagina. On her admission, the region of the buttock was riddled with sinuses, and there was a stricture of the rectum one inch from the anus, through which the finger could not be passed. She died on the twelfth day after colotomy. At the *post mortem* inspection (No. 89) the peritoneum, in parts, was injected and covered with lymph. It showed no evidence of having been wounded in the operation. The rectum was strictured one inch above the anus; the canal admitting the distal joint of the little finger. The tissue

around the gut were much thickened. Many sinuses passed from the bowel above the stricture into the vagina and buttock. The bowel was covered with bands like those of the heart. The kidneys were normal.

CASE XLIII. *Syphilis: Stricture of the Rectum: Burrowing Abscesses of the Buttock and Perinæum, Invading the Hip: Colotomy: Cure of the Stricture: Death from Hip-joint Disease.*—Louise P., aged 24, was admitted on August 29th, 1873, under my care. Colotomy was performed on September 2nd; death occurred between four and five months later, on January 14th, 1874. She was married, and had had one child, and one miscarriage. She had had difficult defæcation for one year, and had had syphilis for the same time. When admitted, she had stricture and ulcer of the bowel, recto-vaginal fistula, and abscess in the buttock. Her feebleness was so great as almost to forbid an operation. On September 2nd colotomy was performed, as much for purposes of relief as of cure, and the patient afterwards rapidly improved. On November 25th she had pain in the thigh, from thrombosis of the femoral vein. On December 16th there were pus in the groin and thigh, and hip-joint disease. From this she died. At the *post mortem* inspection (No. 17, 1874), there was found a perfect artificial anus; no peritonitis. The lower four inches of the rectum were much diseased and covered by irregular bands; above the anus were many irregular openings leading to an abscess-cavity in the buttock, behind the hip-joint, with which it communicated from behind. The calibre of the bowel was good. The hip-joint was completely disorganised.

CASE XLIV. *Syphilis: Ulceration of the Rectum: Cicatrices in the Liver: Chronic Pericarditis: Tubercular Phthisis: Mixed Lardaceous, Granular, and Fatty Kidneys.*—Eliza G., aged 29, was admitted on May 6th, and died on July 18th, 1876. She had had rheumatic fever ten years before; had miscarried two years since; and, one year before admission, had griping pains in the bowels, diarrhœa, and blood in the stools. These symptoms continued till her death. At the necropsy (No. 264), the intestines were healthy down to the lower end of the rectum, the coats of which were very thick, and irregularly ulcerated. An aperture led into an abscess in the left broad ligament, by the side of the uterus. There were cicatrices, with white fibrous tissue, in the liver.

CASE XLV. *Syphilitic Ulceration of the Rectum: Recto-vaginal Fistula: Peritonitis: Abscess about the Rectum.*—Emily W., aged 37, admitted on April 30th, 1873, died on May 10th. She was married, and had had one healthy child, one miscarriage, one still-born child, and one child delivered by instruments three years beforehand, which died. After this, within three weeks of labour, she noticed that wind passed *per vaginam*. Three months after this, she had difficulty in defæcation, and, six months before admission, complete obstruction of the bowels. Seventeen days before she came to Guy's Hospital, fæces passed *per vaginam*. She was admitted with stricture of the rectum, an inch and a half from the anus. The abdomen was distended. On May 7th, there was diarrhœa, so-called, and death three days later. At the necropsy (No. 139), acute peritonitis was

found. The lower inch of the rectum was healthy; above this, the rectum was ulcerated to the extent of two inches. The mucous membrane was destroyed. There were two openings from the rectum into the vagina, which was healthy, except for the fistulæ. The upper part of the ulcerated bowel was extremely narrowed, not measuring an inch and a quarter in circumference, when laid open. Above the stricture, the bowel measured four and a half inches. The connective tissue around the stricture was full of pus.

CASE XLVI. *Syphilitic Stricture of the Rectum and Fistula: Phthisis of the Apices: Ulceration of the Cæcum: Amyloid Degeneration of the Liver, Spleen, Kidneys, and Stomach.*—Jane J., aged 26, admitted on January 5th, 1876, died on February 14th. She was a charwoman; had had one child four years before, and one miscarriage. She had been very healthy until three years before admission, when she had rheumatic fever; five months since she had uterine inflammation, and three weeks ago her knees began to swell. When admitted, she had an œdematous face, and a red raised eruption on the neck and forehead. The urine was of specific gravity 1009, and albuminous. On January 26th, diarrhœa supervened; and the patient died from vomiting and diarrhœa on February 14. At the necropsy (No. 71), the whole of the small intestine was found extremely lardaceous; the large bowel less so; the cæcum contained three large ulcers. The parts about the uterus were matted together by inflammatory material of some date. An abscess behind the uterus communicated with the bowel, and contained grape-stones, etc. The rectum at this spot was dilated, and its mucous surface ulcerated. Lower down, an inch and a half from the anus, the bowel was so narrowed by cicatricial contraction as only to admit the tip of the little finger. There was no evidence of ulceration at the part.

CASE XLVII. *Syphilis: Stricture of the Rectum: Recto-vaginal Fistula: Old Ulceration of the Colon: Gummata in the Lung: Amyloid Viscera.*—Amelia T., aged 28, admitted on November 2nd, died on November 26th, 1877. She had been married at the age of 16, but had had no children; had never menstruated; had had syphilis. She had had stricture of the rectum one year, which had been treated with bougies. She was readmitted with amyloid viscera and vomiting. The necropsy (No. 408) revealed thrombosis of the cerebral sinuses; the arteries were sound. Gummata were softening down in the lungs. The greater part of the large bowel was contracted, evidently from old ulceration. The contraction was more marked towards the rectum. About one inch above the anus, there was puckering of the stricture from old ulceration; but all the parts had now healed. The viscera were lardaceous.

CASE XLVIII. *Syphilis: Ulceration of the Rectum: Periproctitis: Cellulitis of the Back: Atheroma of the Aorta.*—Amelia P., aged 50, was admitted to Guy's Hospital on March 2nd, 1883, and died on April 7th. She was a charwoman, and was admitted for diarrhœa and pain in the right hip. At the age of 20, she had had sore-throat and loss of voice, and had been ill five weeks. She had had no rash or other symptoms. She had otherwise had good health. In January 1883, she fell on her right side, which caused local pain. She went

to bed, and had not since risen from it. She vomited the day after the accident, and soon afterwards diarrhœa set in, which had continued. She lost flesh. On admission, she had pain behind the right trochanter. The right hip was sound; no pain was produced on the iliac crests being pressed together. There were symptoms of enteric disease. At the necropsy (No. 127), there were condylomata about the vulva. In the rectum, about five inches and a half from the anus, was a clean-cut ulcer, with rounded edge, of the size of a fourpenny-piece, which had perforated into the peritoneal cavity. Below this, the mucous membrane was congested and thickened; lower still, a large serpiginous ulcer existed, two inches and a half long. There was a second perforation. The rectum was dissected out by suppuration.

Conclusion.—From these data, I trust, therefore, you will feel no hesitation in accepting the proposition that both simple and syphilitic ulcerations of the rectum are most obstinate in healing, and that they, as a rule, lead on to stricture; and that, after colotomy, these ulcerations rapidly heal.

It is not necessary for me to dwell for any time upon cancerous ulcers and strictures of the rectum, since there is but small chance of these not being diagnosed, should a local digital examination be made. Without such an examination, an error may certainly be fallen into, and it is to be regretted that such errors are frequent. Persistent rectal irritation and looseness of the bowels should always induce the medical adviser to make a local rectal examination, and the presence of piles associated with these symptoms should make this examination more imperative. The frequent discharge of mucus with the motion demands a local investigation; and, where this discharge has been of long standing, it invariably means some local cause. Steadily increasing difficulty in defæcation, and attacks of "stomach-ache," should always suggest some mechanical obstruction; and when these symptoms are associated with visible peristalsis and perceptible coils of distended bowel, without the passage of mucus or blood, an annular stricture of the large intestine should be suspected. The passage of blood, with mucus or pus, following upon obstruction, or associated with looseness of the bowels, is strong evidence of ulceration of the bowel, and, when combined with sacral pain, suggestive of cancer. When, with the finger, a localised or diffused infiltration of the walls of the rectum is felt, the diagnosis of cancer is confirmed; for, in the rectum, as elsewhere, a local cancer first shows itself as a local infiltration of the tissue it attacks; and, later on, as an infiltration of neighbouring parts, first of the coats of the bowel, and subsequently of the surrounding connective tissue. When the disease is confirmed, the ulcer will be of a raised nodular character, with elevated edges. Simple and syphilitic ulcers and strictures never exhibit these local characters. They simply show ulcerated surfaces, with more or less decided cicatricial bands or adhesions, the cicatricial bands at times taking the form of diaphragmatic strictures. Rectal discharges, with incontinence of fæces, as a rule, indicate ulceration involving the internal sphincter.

I have no wish, however, on the present occasion to dwell upon the pathology of cancerous strictures, for my object is to bring them, with

others, before you in their clinical aspect, and to consider how all tend towards death, and in what way they actually kill. Upon this aspect of the subject, I trust I have been sufficiently explicit, since pathological evidence points very clearly to the conclusions I have already laid down, that cancerous, as well as all other forms of stricture, as a rule, cause death by exhaustion or peritonitis, the latter being, in the majority of cases, consecutive to either sloughing, rupture, or ulceration of the overdistended bowel above the stricture.

With these pathological facts before us, let us pass on and consider the indications for treatment.

The great difficulty with which the physician or surgeon has to contend, in dealing with ulcerations of the rectum or the large intestine, is due to the situation of the ulcer and the absolute impossibility, on that account, of keeping it quiet, clean, and free from local irritation—three essential points for the healing of all ulcers. In this fact is to be found the reason why ulcers in these parts, of whatever nature, though small, are slow in healing; why extensive ulcerations, if left alone, apparently never do heal; why, in the process of repair, there is so much cicatricial tissue, and, as a result, contraction; and why, in a general way, all healed or healing extensive ulcers tend to produce obstructive changes. To the dysenteric, simple, or syphilitic ulcerations, these remarks are particularly applicable; to cancerous ulcers, they need not be applied, since in them, when the process of degeneration, and consequently of ulceration, commences, it is always progressive.

In all cases of ulcer of the bowel, therefore, the horizontal posture, the administration of such food as milk and animal broths with farinaceous compounds—food that supplies fuel to the body, and nourishes, and at the same time leaves behind it the least irritating amount of waste to pass away—should be ordered. Large soothing and occasionally stimulating enemata, and tonic medicines, are essential. When the stage of obstruction has commenced, laxatives are required; and of these the oily forms are the most useful. An enema of olive- or castor-oil is preferable to any other. Purgatives are to be condemned, since they, by producing forced peristalsis of the bowel above the stricture or seat of obstruction, tend to do harm. Belladonna is a valuable drug, and, when combined with opium, gives great comfort. The use of enemata administered through the long tube is dangerous; in some cases, they may give undoubted relief, but in others they cause rupture of the bowel or perforation, and, as a result, fæcal extravasation and death.

When the stage of obstruction has been reached, other important questions become prominent, and more particularly the question of operative interference; since it has been shown, and I trust I may say demonstrated, that obstruction *per se*, from whatever cause, brings about changes in the bowel above the obstruction, which at any time may induce a fatal result. Under these circumstances, the question of colotomy should be seriously entertained, since, when the disease is not cancerous, a rapid healing of the ulcerated bowel may, with confidence, be expected; and, should the malady be of a cancerous nature, rapid and complete relief will be given to the patient.

To support this view, I must refer you to the accompanying tables of 82 cases of colotomy which have taken place in my practice, and to the three following propositions which have been educed from their consideration. (*See* pages 30 to 38.)

1. In all cases of cancerous stricture of the rectum or colon, including the annular—which are not amenable to lumbar colectomy or anal excision—right or left lumbar colotomy is strongly to be advocated, with the well grounded hope of relieving suffering, retarding the progress of the disease, and prolonging life even for five or six years.

2. Lumbar colotomy is valuable as a curative operation in syphilitic and simple ulcerations of the bowel which resist other treatment, including cases of recto-vesical fistula; and it is remedial in examples of volvulus of the sigmoid flexure, as well as of obstructions caused by tumours.

3. To secure these advantages, it is necessary for the operation to be performed before the pernicious effects of obstruction occur.

To support the first proposition, or that which deals with cancerous strictures of the rectum, I would ask you simply to refer to the second of the three tables of cases now placed before you—cases, I may say, which have all passed through my hands; and in them you will find that, out of thirty-four examples which had not been allowed to drift almost to death's door before operative relief was undertaken, and had recovered from the operation, nine survived six months, seven lived from six to twelve months, nine survived for periods varying from thirteen to forty-one months, or three and a half years, and one was alive and living in comfort five years after the operation. And yet these facts, strong as they are, do not tell half the tale; for, by statistics, we cannot estimate the amount of suffering saved, comfort given, or happiness added; and, to estimate correctly the value of colotomy, a large balance of such advantages must be placed in the scale. The majority of the patients who lived the many months I have summarised died simply from asthenia; not from pain, peritonitis, or obstruction; but from a slow and painless process of exhaustion, due to the progress or extension of cancerous disease. One of the patients, aged 64, for whom the operation had been performed solely with the view of rendering what appeared to be the last few weeks of life endurable, lived in comparative comfort three and a half years, and then died of apoplexy; and a second, aged 66, in whom the operation was undertaken under like circumstances, lived and died without pain twenty-six months after the operation; and a third, aged 38, when operated upon, was alive and in comfort five years later. With these facts before us, even if they were unsupported by the past recorded experience of Curling, Hawkins, Pollock, Mason, Morris, and others, I think it must be admitted that, in cancerous disease of the colon or rectum, right or left lumbar colotomy, if not postponed to too late a period of the disease, that is, till the stage of obstruction has advanced, is most valuable; and that it is so.

First, in retarding the progress of the disease, by removing from its presence a source of irritation—the passage of fæces;

Secondly, in relieving the pain caused by the passage of fæces, through the narrowed and probably ulcerated lumen of intestine, and the ineffectual efforts of the bowel above to pass on its contents;

Thirdly, in prolonging life, probably for one or two years, and possibly for four or five years, and, at the same time, in saving the patient from a painful and miserable death—that from obstruction; whilst, at the same time, it leads the patient to his last home in as painless and quiet a way as can be desired.

The operation, however, to secure these desirable results, must be undertaken in the state of disease that precedes pernicious obstruction. For, as soon as marked symptoms of obstruction occur, changes, to which attention has been already drawn, have commenced in the bowel above the seat of obstruction, against which the operation of colotomy can have no influence. The operation, moreover, if considered early, that is, before decided obstruction has taken place, may possibly, as demonstrated by me in 1882, in some few cases be superseded by lumbar "colectomy," or the removal of the stricture itself through the lumbar wound; an advantage which needs no argument to demonstrate it. For full particulars of this operation, I must refer to my paper on lumbar colectomy, published in the *Transactions of the Royal Medical and Chirurgical Society*, for 1882 (vol. lxv, p. 131).

I must now proceed to support the second proposition, that lumbar colotomy is valuable as a *curative* operation in syphilitic and simple ulcerations of the rectum which resist other treatment, as it is in cases of recto-vesical fistula. In my Table III, I have included twenty cases of colotomy for simple and syphilitic strictures; five were clearly of a syphilitic origin, several were of the dysenteric type, others may have been of the tubercular variety. In all, the strictures were long and narrow, for diaphragmatic strictures can be treated by simpler means. Seven of these twenty cases died within the month, from either the operation or from its having been postponed too long; five died within six months; four survived the operation from one to five and a half years, all dying from causes unconnected with their local trouble; one, aged 28, from bronchitis at two and a half years; one, aged 38, from kidney-disease at three years; one, aged 50, from pneumonia at three and a half years; one, aged 70, from ruptured heart at five and a half years after operation. Four other patients were alive when the tables were compiled, in July 1884; one seventeen months after the operation, another two and a half years, a third four years after, and in good general health, and a fourth fourteen years after. Of the four patients who were alive when last heard of, the one who was alive and well seventeen months after the operation was a man, aged 35, who had been operated upon for extensive ulceration of the rectum with obstruction of two years' standing. After the operation, the bowel-symptoms rapidly disappeared, and the ulcers healed, although with contraction. All the motions passed through the lumbar wound. The second case was a man, aged 25, who had had syphilis three years before the operation, and ulceration and stricture of the rectum for two years. The bowel an inch and a half above the

[*Continued at page 38 below the line.*]

TABLE I.—*Cases of Lumbar Colotomy for Cancer*

No.	Hospital or Private Patient.	Name of Patient.	Age.	Date of Operation.	Colotomy, Right or Left
1	Hospital—Dr. T. Addison	Mary P—	48	Oct. 6th, 1859	Left
2	Private	Mr. T—	61	Nov. 2nd, 1868	Left
3	Hospital	William B—	52	May 12th, 1871	Left
4	Hospital	Thomas M—	68	Aug. 20th, 1872	Left
5	Hospital	Edmund B—	67	May 7th, 1872	Left
6	Hospital	William H—	64	July 17th, 1873	Left
7	Private	Mr. H—	69	July 10th, 1873	Left
8	Hospital	Frederick D—	38	Aug. 26th, 1873	Left
9	Hospital	Emma W—	44	Jan. 12th, 1874	Left
10	Private—Mr. R. Phillips	Mr. G—	37	June, 1874	Left
11	Private—Dr. Baber	Mrs. B—	56	March, 1875	Left
12	Private	Mr. P—	45	July 30th, 1875	Left
13	Hospital	William M—	44	Sept. 3rd, 1875	Left
14	Private—Drs. Huddard and Habershon	Mr. B—	52	March, 1876	Right
15	Private—Dr. Owens	Mr. S—	37	Aug. 14th, 1877	Left
16	Hospital	Eliza C—	56	Jan. 9th, 1877	Left
17	Hospital	William T—	54	Aug. 15th, 1877	Left
18	Hospital	Michael S—	55	April 4th, 1879	Left
19	Private—Dr. Gorham, Tunbridge	Miss H—	52	Nov. 30th, 1880	Left
20	Hospital	Arthur le G—	62	Nov. 22nd, 1881	Left
21	Private—Dr. Deeping, Southend	Mr. S—	64	Feb. 10th, 1882	Left
22	Private—Mr. E. Wright	Mr. H—	64	April 26th, 1882	Left
23	Private—Mr. W. Burton	Mr. H—	47	June 25th, 1882	Left
24	Private—Dr. May, Maldon	Mrs.———	51	Oct. 18th, 1882	Left
25	Hospital	Eliza H—	55	Dec. 5th, 1882	Left
26	Private—Dr. Neumann	Mr. A—	52	Aug. 22nd, 1883	Right

ANALYSIS OF THE TWENTY-SIX CASES.—19 in males, 7 in females; average age, 53⅜ years: average age of men 54⅛, of women 51⅚. Twenty-four on the

that Died within the Month. "Too Late Cases."

Disease for which Operation was performed.	Result.	No.
Annular stricture of rectum. Obstruction complete for 6 weeks	Sank. Died on 12th day, greatly relieved.	1
Cancerous stricture of rectum. Symptoms 2 years	Sank on 2nd day.	2
Epithelioma of anus and rectum of 6 years' growth	Died on 24th day; sank. Operation-wound healed. P.M.—Cancer of viscera.	3
Cancerous stricture of rectum. Symptoms 2 years	Sank on 3rd day. P.M.—Large cancerous mass in pelvis.	4
Cancerous stricture of rectum. Severe symptoms 8 months	Sank on 6th day. P.M.—Disease quite local.	5
Cancerous stricture of rectum. Symptoms 2 years, blood for months	Sank on 3rd day. Peritonitis; bowel had ruptured above the stricture.	6
Cancerous stricture of rectum. Obstruction complete for weeks	Sank on 20th day.	7
Increasing obstruction for 6 years. Recto-vesicle fistula for months	Sank on 10th day. Cancerous ulcer into bladder, with secondary growths.	8
Cancerous stricture, with symptoms for 5 years. Obstruction for 5 months	Sank on 3rd day. Peritonitis; cancerous ulcer between the rectum and jejunum.	9
Cancerous stricture of rectum of many months' standing	Sank on 4th day.	10
Chronic obstruction complete	Sank on 7th day.	11
Cancerous stricture of rectum	Sank on 3rd day.	12
Cancerous disease of rectum, with fæcal fistula 9 months	Sank on 3rd day. Peritonitis. P.M.—Bowel above stricture ruptured.	13
Annular stricture of transverse colon. Symptoms 1 year, obstruction 4 weeks	Sank on 10th day. P.M. confirmed diagnosis.	14
Cancerous stricture of rectum of slow contraction	Sank on 5th day.	15
Cancerous stricture of rectum. Symptoms 3 or 4 years. Blood	Sank on 3rd day. P.M.—Cancer in viscera and peritoneum.	16
Cancerous stricture of rectum. Pain, blood and mucus, with fæces, for 8 years	Died on 18th day suddenly, from sudden pain, collapse, and ruptured spleen. No peritonitis.	17
Cancerous stricture of rectum. Nine months	Sank on 23rd day. P.M.—Peritoneal cancer and volvulus of sigmoid flexure	18
Cancerous stricture of rectum many months. Obstruction 3 weeks	Sank on 3rd day.	19
Cancerous stricture of rectum. Bleeding for 18 months	Sank on 4th day. P.M.—Peritonitis, and much cancer.	20
Cancerous stricture of rectum	Sank on 5th day.	21
Cancerous stricture of rectum	Sank on 5th day.	22
Cancerous stricture of rectum	Sank on 5th day.	23
Cancerous stricture of rectum	Sank on 5th day.	24
Cancerous stricture of rectum and vagina 15 months	Sank on 27th day.	25
Stricture of rectum	Sank on 4th day.	26

left, and 2 on the right side. Eighteen died in the first week, 3 in the second week, 2 in the third week, and 3 in the fourth week.

TABLE II.—*Cases of Lumbar Colotomy*

No.	Hospital or Private Patient.	Name of Patient.	Age.	Date of Operation.	Colotomy, Right or Left
1	Hospital	James W—	39	July 31st, 1868	Left
2	Hospital	Martha P—	57	May 31st, 1870	Left
3	Private	Miss B—	18	Sept. 6th, 1871	Right
4	Hospital	Eliza B—	38	Oct. 10th, 1871	Left
5	Hospital	Richard C—	46	Jan. 9th, 1872	Left
6	Private	Mrs. B—	24	Feb. 10th, 1872	Left
7	Hospital	George S—	56	April 14th, 1873	Left
8	Private——Dr. Stilwell and Sir W. Gull	Mrs. B—	72	Dec. 6th, 1874	Right
9	Private—Dr. Brown, Ealing	Mr. R—	64	June 2nd, 1876	Left
10	Private—Mr. T. Harries, Aberystwyth	Mr. T. D.—	57	Feb. 12th, 1877	Left
11	Private—Drs. Chambers and Menzies	Mr. A—	57	Dec. 30th, 1876	Left
12	Private—Mr. Hodgson, Brighton	Mr. B—	54	April 16th, 1878	Left
13	Private—Dr. Drewry	Mrs. B—	56	May 4th, 1878	Left
14	Private—Dr. Wallace	Mr. S—	42	June 13th, 1878	Left
15	Hospital	John B—	39	June 27th, 1878	Left
16	Hospital	George W—	51	Nov. 12th, 1878	Left
17	Private—Dr. Bowes, Herne Bay	Mr. S—	64	April 5th, 1879	Left
18	Private—Dr. Kiddle, Leamington	Mr. H—	66	Nov. 8th, 1879	Left
19	Hospital	Mary T—	59	Dec. 9th, 1879	Left
20	Hospital	Alice P—	25	Aug. 6th, 1880	Left
21	Hospital	Eliza C—	29	Feb. 3rd, 1880	Left
22	Private—Dr. Andrews	Mr. W—	42	Nov. 15th, 1880	Left
23	Hospital	Emma R—	38	Nov. 16th, 1880	Left
24	Private—Mr. J. Burton and Dr. Higgens	Mrs. S—	42	April, 1881	Left
25	Hospital	Charles H—	64	June 18th, 1881	Left
26	Hospital	Samuel R—	15	Dec. 30th, 1881	Left
27	Hospital	John J—	60	Feb. 15th, 1881	Left
28	Hospital	Eliza W—	46	Feb. 4th, 1881	Right
29	Hospital	Sarah A—	33	Nov. 2nd, 1881	Left
30	Hospital	Richard H—	62	Feb. 10th, 1882	Left
31	Hospital	Daniel S—	39	May 12th, 1882	Left
32	Private—Dr. Bailey	Mr. S—	35	July 28th, 1882	Left
33	Private—Dr. Calthrop	Mr. T—	62	Mar. 16th, 1882	Left
34	Hospital	John C—	52	April 8th, 1884	Left

ANALYSIS OF THE THIRTY-FOUR CASES, OR 56 PER CENT.—9 died within 6 months, 7 lived from 6 to 12 months, 9 lived from 1 to 5 years, 1 was alive 5 years after, 8 left the hospital convalescent: 21 occurred in males, 13 in females;

for Cancer that Recovered from the Operation.

Disease for which Operation was performed.	Result.	Survived Operation.	No.
Cancerous stricture of rectum. Symptoms 3 years	Convalesced. Died of abdominal cancer	18 months.	1
Cancerous stricture of rectum	Convalesced in 7 weeks	Left hospital	2
Annular stricture of rectum	Convalesced. Died of internal cancer	9 months.	3
Supposed cancer of rectum. Symptoms 18 months. Blood and mucus	Convalesced	Alive 5 years subseqently	4
Cancer of recto-vesical septum	Convalesced	Left hospital	5
Extensive rectal ulceration, supposed to be cancer and stricture	Convalesced. Sank	33 months.	6
Cancerous stricture of rectum and anus, with fæcal fistula	Convalesced. Sank. Much local cancer, no visceral	10 months.	7
Colloid cancer of rectum and sigmoid flexure	Convalesced. Sank later from disease	21 months.	8
Cancerous stricture of rectum, with recto-vesical fistula 3 months	Convalesced. Sank	3½ months.	9
Cancerous stricture of rectum. Symptoms 1 year. Bleeding 6 months	Convalesced. Sank	16 months.	10
Cancerous stricture of rectum 2½ years. No solid fæces for 1½ years	Convalesced. Sank	4 months.	11
Cancerous stricture of rectum 1 year	Convalesced. Sank	7 months.	12
Cancerous stricture of rectum, with profuse hæmorrhage, 1 year	Convalesced. Sank	12½ months.	13
Cancerous stricture of rectum, with fæcal fistula many months	Convalesced. Sank	12 months.	14
Cancerous stricture of rectum. Symptoms 16 months	Convalesced. Died of stricture of urethra (?)	10 months.	15
Cancerous stricture of rectum. Symptoms 2 years. Great obstruction	Convalesced. Sank	9½ months.	16
Cancerous stricture of rectum. Symptoms 1 year	Convalesced. Died of apoplexy	41 months.	17
Cancerous stricture of rectum. Symptoms about 1 year	Convalesced. Sank. Internal cancer	26 months.	18
Cancerous stricture of rectum 9 mnths	Convalesced	Left hospital	19
Colloid cancer of rectum	Convalesced. Died from perforation of growth into peritoneal cavity	5 weeks.	20
Cancer of rectum. Symptoms 6 mnths	Convalesced in 5 weeks	Left hospital	21
Cancerous stricture of rectum. Symptoms 6 months. Obstruction 2 weeks	Convalesced. Sank	3 months.	22
Epithelioma of rectum and anus 2 yrs.	Convalesced. Sank	13½ months.	23
Cancerous stricture of rectum. Obstruction 3 months, complete 2 weeks	Convalesced. Sank. Visceral cancer	15 months.	24
Cancerous stricture of rectum. Symptoms 6 months	Convalesced	Left hospital	25
Cancerous stricture of rectum. Symtoms 5 months	Convalesced. Sank	3½ months.	26
Cancerous stricture of rectum. Symptoms 25 years. Blood, mucus, and increasing difficulty of defæcation	Convalesced	Left hospital	27
Cancerous disease of rectum. Symptoms 9 months	Convalesced. Died from extension of local disease	6 weeks.	28
Cancerous disease of rectum. Symptoms 2 years. Blood and pain	Convalesced. Died suddenly. Much local disease	30 days.	29
Cancerous stricture of rectum	Convalesced in 6 weeks	Left hospital	30
Cancerous stricture of rectum. Symptoms 6 months	Convalesced. Sank	10½ months.	31
Cancerous stricture of rectum	Convalesced. Sank	6 months.	32
Cancerous stricture of rectum	Convalesced. Sank	6 months.	33
Cancerous stricture of rectum	Convalesced in 1 month	Left hospital	34

31 were on the left, and 3 on the right side. Average age 44 ; of men 46, of women 41.

TABLE III.—*Cases of Colotomy for Simple or*

No.	Hospital or Private Patient.	Name of Patient.	Age.	Date of Operation.	Colotomy, Right or Left
1	Hospital	Eliza O—, married, 2 children 4 stillborn, 1 miscarriage	29	Mar. 19th, 1872	Left
2	Hospital	Louisa C—	33	Dec. 5th, 1867	Left
3	Hospital	Mary S—, married, no children	46	Mar. 3rd, 1876	Left
4	Hospital	Hans K—, been abroad, but not had dysentery	65	Dec. 30th, 1881	Left
5	Hospital	Eliza B—, married, 1 child 1 miscarriage	42	Feb. 6th, 1883	Left Bowel torn across
6	Hospital	Harriet K—	37	Nov. 28th, 1877	Left
	Hospital	James R—	49	Nov. 14th, 1882	Left

Syphilitic Stricture of Rectum that Died within the Month.

Disease for which Operation was performed.	Result.	Survived Operation.	No.
Syphilitic stricture of rectum. After last child, two years ago, had bowel trouble, which soon gave rise to fæcal, vaginal, and perineal fistulæ	Sank. P.M.—Good repair in loin; rectum almost obliterated from cicatricial bands	On 13th day	1
Chronic ulceration of rectum, with increasing obstruction for months	Sank. P.M.—Sigmoid flexure, rectum and uterus all matted together; bowel very narrow and thickened	On 4th day	2
Very narrow stricture from 1 inch above anus; blood, mucus, and pain for months, with increasing obstruction	Sank. P.M.—Extreme ulceration of rectum from 2 inches above anus, with sinus	On 3rd day	3
Admitted with recto-vesical fæcal fistula of 6 weeks' standing; 12 years before this patient had for weeks passed wind with his water, from which he had recovered	Sank. P.M.—Marked signs of old ulceration and contraction of rectum; sign of old cicatrix into bladder, with recent fistula	On 17th day	4
Cicatricial stricture, with ulceration of 5 years' standing, commencing ½ inch from anus	Sank. P.M.—Bowel very ulcerated and friable up to colon; it had been torn through at operation	On 4th day	5
Very narrow stricture and ulceration after 6 months' symptoms	Convalesced. Died of phthisis. Bowel repaired; one stricture 3 inches, and a second 6 inches, from anus	28 days	6
Stricture and ulceration. Much pain and blood for 6 months	Sank. P.M.—Colon much ulcerated; bowel contracted	30 days	7

TABLE III.—

Cases of Lumbar Colotomy for Non-cancerous

8	Hospital	William D—	46	April 5th, 1867	Left
9	Private——Dr. Habershon	Robert R—	46	July 5th, 1870	Left
10	Hospital	Mary L—	38	Aug. 12th, 1873	Left
11	Hospital	Mary P—married no children, no miscarriage	37	Nov. 9th, 1881	Left
12	Hospital	William H— no syphilis	27	Nov. 7th, 1881	Left
13	Hospital	Philip K—	35	Dec. 2nd, 1882	Left
14	Hospital	Caroline H-, married, had miscars.	28	May 10th, 1878	Left
15	Hospital	William B—, syphilis 3 years	25	July 12th, 1878	Left
16	Hospital	Susan S—, marrd. had miscarriages	40	May 3rd, 1881	Left
17	Hospital	Louisa P—, married, 1 child, 1 miscarriage, had syphilis	24	Sept. 2nd, 1874	Left
18	Private—Sir W Gull	Mr. T—	64	Mar. 16th, 1869	Left
19	Private-Mr. R. Phillips	Mr. S—	46	Nov. 14th, 1877	Left
20	Hospital	John S—	38	July 16th, 1880	Left
21	Hospital	Fred. R—	18	Mar. 2nd, 1874	Left
22	Private-Mr. R. Phillips	Mrs. M—	46	April 5th, 1870	Left

ANALYSIS OF TWENTY-TWO CASES NOT CANCEROUS.—19 for stricture and ulceration of the rectum not cancerous, 1 for obstruction from volvulus of the sigmoid flexure, 2 ditto from pelvic tumours; 10 of the 19 cases of stricture occurred in females, 9 in males; average age of 19 cases, 40 years—of females

Continued.

Stricture or Disease that Convalesced after Operation.

Recto-vesical fæcal fistula, with rectal obstruction and ulceration	Convalesced. Died of kidney disease. Rectum repaired and contracted	5 months	8
Recto-vesical fæcal fistula, with obstruction	Convalesced	14 years, alive & well	9
Stricture of rectum after ulceration for 6 years. Much bleeding	Convalesced. Died of kidney disease: rectum healed and contracted	34½ months	10
Rectal symptoms for 15 years. Pain, blood, mucus with fæces. Admitted with narrow stricture, probably syphilitic	Convalesced. Sank from kidney disease and large spleen; lower 3 inches of rectum, lost its mucous membrane with cicatricial tissue outside	40 days	11
Stricture and ulceration of rectum 17 months. Blood and mucus with fæces	Sank	18 weeks	12
Stricture and ulceration of rectum. Symptoms 2 years	Convalesced. Bowel healed and almost closed	18 mons. well comfortable	13
Syphilitic stricture and ulceration 30 months. No solid fæces passed for 6 months	Convalesced. Died from bronchitis	1 year	14
Very narrow stricture, 1½ inches above anus. Symptoms for 2 years	Convalesced. Bowel had healed and almost closed 2 years later	2½ years later alive & well	15
Admitted with narrow stricture and vaginal and perineal fæcal fistula. No history of syphilis	Sank. P.M.—Rectum greatly indurated, contracted, and ulcerated; ulcers vertical	9 weeks	16
Admitted with recto-vaginal fæcal fistula and fistula in buttock. Operation performed for relief	Died of hip-disease. All the fistulæ had closed soon after operation. P.M.—Lower 4 inches of rectum covered with bands of cicatricial tissue much contracted	4½ months	17
For vesico-rectal fæcal fistula	Rapidly convalesced. No fæces passed after operation through rectum. Died of ruptured heart. P.M.—Rectum healed; old fistula into bladder small	5½ years	18
Multiple-rectal fibrous polypoid growths of 3 years' standing. Had had polypi removed twice before. Great tenesmus and discharge of blood and serum. At once relieved by the operation	Convalesced, and died from pneumonia	41 months	19
Complete obstruction for 6 weeks. Operation to save life. Case, one of volvulus in all probability	Convalesced	4 years, alive and well	20
Cancerous pelvic tumour occluding rectum	Sank from the disease relieved	7 weeks	21
Pelvic tumour obstructing rectum (cancerous)	Relieved by operation. Died from ruptured cancerous mesenteric tumour	4 days	22

35, of males 45. All operations on left loin. Nine died within the month; 5 within 6 months; 4 lived respectively 1 year, 3, 3½, and 5½ years. Four are now alive and well, 1½, 2½, 4 years, and 14 years after the operation.

ANALYSIS OF THE WHOLE NUMBER OF EIGHTY-TWO CASES OF COLOTOMY.

60 were performed for cancerous stricture.
19 ,, ,, stricture and ulceration of the rectum not cancerous.
1 was performed for volvulus of the sigmoid flexure of the colon.
2 for obstruction due to pelvic tumours.

Side operated upon :—

Left lumbar colotomy was performed in 77, and right lumbar colotomy in 5 of these cases, all of the 5 being cancerous. Right lumbar colotomy was called for in 1 out of 12 cases of cancerous stricture requiring operation.

Duration of life after the operation :—

26, or 43 per cent., of the cancerous, and 6, or 31.5 per cent., of the non-cancerous cases, with one of the cases operated upon for obstruction, or 40 per cent. of the whole number of 82 cases operated upon, died within the month.

34, or 56 per cent., of the cancerous, and 13, or 68.5 per cent. of the non-cancerous cases, with the case of volvulus and one of the cases of obstruction, or 60 per cent. of the whole number of cases operated upon, received, more or less fully, the benefit of the operation.

Of the 49 successful cases :—

16	cases,	9	cancerous and	7	non-cancerous, died within 6 months.
8	,,	7	,,	1	,, lived from 6 to 12 months.
12	,,	9	,,	3	,, lived from 1 to 5½ years.
5	,,	1	,,	4	,, were alive from 1½ to 14 years after operation.
8	,,	8	,,		had left the hospital convalescent.
49		34		15	

Sex :—

Of the 60 cancerous cases :		40 were in males,	20 in females.
,, 19 non-cancerous :		10 ,,	9 ,,
1 case of volvulus :		1 was in male.	
2 cases of obstruction :		1 ,,	1 in female.
Of the 82 cases :		52 were in males,	30 in females.

Cancerous stricture is more frequent in males. Non-cancerous stricture is found equally in both sexes.

Age :—

The average age of the cancerous cases,
When fatal was 53 : in male subjects 54, in female 51.
,, successful 44 ,, 46 ,, 41.

The average age of the successful being about 10 years less than that of the fatal cases.

No abnormality as to the position of the colon was met with in any of the 82 cases.

[*Continued from page 29.*]

anus was very narrow. Two and a half years after the operation the man was well. He passed all his motions through his lumbar wound. The rectum was cicatricially almost closed. The third case was that of a man who, when 38 years of age, was dying from obstruction of six weeks' standing, the cause of which was not clear. He was a patient of Dr. Wilks. To save life, I opened the colon in his left loin, and with success. Four years later, he was alive and well. All his motions passed through the lumbar wound. No fresh light has been thrown upon his disease. I was, and am disposed to think it was due to a twist of the sigmoid flexure.

The fourth case was a patient of Dr. Habershon, a man, aged 49, who had a recto-vesical fistula of three years' standing. The disease in his case was supposed to have been cancerous. I operated upon him to give relief to his bladder as much as to his intestinal symptoms, with no idea of helping towards a cure. He rapidly convalesced after the operation, and all his motions passed through his loin. Fourteen years after the operation, May 20th, 1884, he wrote to me as follows. "I am glad to inform you that the operation has been quite successful, as it has added nearly fourteen years to my life. I am quite free from pain, and I feel as strong as if nothing was the matter with me. The contents of the bowel all pass through the opening in the back.

Nothing passes into the lower bowel except the water from the bladder (*vide* Clinical Society's *Transactions*, vol. v, 1872, page 127).

With this evidence, added to what has been brought forward in the early part of this lecture, I trust I have fairly proved the truth of the second proposition, that lumbar colotomy is valuable as a curative operation in syphilitic and simple ulcerations of the bowel which resist other treatment, including cases of recto-vesical fistula. It must however, be remembered that, to secure the advantages of this operation in cases of either cancerous or of non-cancerous stricture, the operation should be performed before the pernicious effects of obstruction occur.

One word as to the operation itself, and particularly as to the best way of guarding against the passage of the fæces past the lumbar opening into the rectum ; for I think all surgeons will be ready to admit that this point is one of importance, and that it is not sufficiently met by any of the operations as ordinarily performed. And yet, on looking over my notes, I have in the majority of cases read that the fæces all pass through the lumbar wound. This fact clearly shows that, as a rule, the object has been attained. In many cases, however, it must be admitted that this desirable result is not secured; and, with the view of making it more certain, I have in two recent cases carried out a plan, which has proved eminently satisfactory. It was as follows: I divided the muscles freely down to the lumbar fascia, and then, having twisted all bleeding vessels, divided it, and exposed the bowel. I easily separated it from its connective tissue attachments, and by so doing, allowed it to project well from the wound.

Having done this, I made sufficient traction upon its pelvic end to enable me to bring outside the deep orifice of the wound a complete knuckle of intestine, with its outer surface on a level with the skin-wound. This I left *in situ*, and simply protected it with a piece of lint covered with vaseline, over this some iodoform-gauze, and outside a mass of Gamgee-tissue. I then applied a broad bandage to the abdomen, carrying its ends above and below, but not over, the lumbar incision. I put no stitches of any kind in the wound, and, beyond what has been described, did nothing to hold the bowel in the position in which I had placed it. Nothing that could be regarded as evil followed this measure. Both patients—a man and a woman—went on without a bad symptom. On the fourth day in one, and on the fifth day in the other case, when I looked at the wound, I found the bowel had retained its position, and had not receded, and that its wall had already united with the skin-wound. I then, with a tenotomy-knife, punctured the bowel, and enlarged the opening for about half an inch in length, when fæces escaped. Both cases subsequently went on to a speedy convalescence, and all the fæces passed through the anal wound. From these two cases, however, I must not speak too confidently about the method advocated, though it seems to be good, and to promise well. It cannot, however, be carried out in all cases. By it, it seems probable that we have a means of simplifying the operation of colotomy to a great degree ; of diminishing the risks of peritonitis in its early stage ; and of enabling us to occlude effectually the

lower end of the rectum, which is a most desirable object of attainment. Whether the same end is to be safely secured by sutures, or by means of pins passed deeply through the bowel, as Mr. Macnamara passes them through the stomach in gastrostomy, or by an absolute division of the bowel, as carried out in my case of colectomy already referred to, time will prove; but there can be no question as to the desirability of our finding out some means by which the contents of the bowel can be wholly discharged through the lumbar wound, and the lower end of the diseased intestine left alone and unirritated. When these means are found, the full benefit of a valuable operation will be demonstrated.

LECTURE III.

On the Differential Diagnosis of Acute Intestinal Strangulation and Typhlitis.

In the two lectures it has been my privilege to deliver, attention has been directed to the subjects of acute intestinal strangulation, acute and chronic intussusception, and chronic intestinal obstruction; and I hope I have not been too dogmatic in my observations. My desire has been to separate, as clearly as I could, these three very different pathological as well as clinical conditions; and to demonstrate to you, by pathological facts and clinical data, how patients die from these conditions, in order that I might point out how a fatal result may be warded off or prevented.

I have said little about the difficulties of diagnosis, nor how to avoid them; and yet, of all points, these are the most important; since, I take it, it is on account of the uncertainty of diagnosis that our treatment of these cases has been uncertain, tentative, expectant, unsatisfactory, and (I must add) unsuccessful. In the present lecture, I propose to consider this subject of diagnosis, and to see if any way of deliverance from the difficulty is to be found.

It is unnecessary to dwell upon the symptoms of an acute intestinal strangulation, since a sudden attack of abdominal pain, accompanied with vomiting, attacking a patient previously in apparent good health—the two symptoms being more or less paroxysmal, and associated with obstruction—mark its nature; and they do so, whether or not they are complicated with an external hernial swelling. When the latter condition obtains, a strangulated hernia is readily diagnosed; when no such swelling is present to make the special diagnosis sure, the symptoms are still enough to indicate the existence of some internal strangulation, although its special form may be obscure.

It is true, that a sudden perforation of the intestine from ulceration—an acute attack of peritonitis following some cæcal or pericæcal trouble—or an acute attack of gall-stones, may simulate to a degree a case of acute intestinal strangulation; and yet, I think, on investigation, the diagnosis of these two former conditions ought not to be difficult. My observations will consequently chiefly point to these; the third, or gall-stone difficulty, I leave for my medical friends to unravel.

Case xlix.—A lady, aged 67, who had previously been perfectly well, was suddenly seized with intense abdominal pain and vomiting; and these symptoms rapidly passed on to collapse and death within

twelve hours. After death, a perforating ulcer of the duodenum was found.

CASE L. *Perforating Ulcer of the Duodenum: Peritonitis: Abdomen not distended.*—Charles R., aged 28, was admitted on July 2nd, 1877. Three weeks previously, after some nausea, he had been attacked with vomiting in the morning, and had not been well since. He had often suffered from constipation. On June 30th, after having taken a warm bath, he was seized with severe pain in the abdomen across the epigastric region, and with vomiting. After twenty minutes the pain ceased, but returned in half an hour, and continued until the following afternoon, when it ceased entirely. The bowels had acted on the day before he had been taken ill. The vomiting, of greenish material, had since been persistent. On July 2nd, two days after the commencement of symptoms, when he was admitted, he lay on the left side, with his legs drawn up. The eyes were sunken and surrounded by a dark areola. The hands were cold. The pulse was not to be counted at the wrist. The abdomen was scarcely, if at all, distended. Temperature 100.4° F. Nutrient enemata were given, and a grain of opium every four hours. The bowels acted repeatedly. Next morning, the man declared himself better; but the collapse increased, and he died at 2 P.M. on that day, July 3rd. At the necropsy (239) acute peritonitis existed. Gas bubbled up in separating the intestines from the liver. It came from a perforating ulcer in the pylorus and first part of the duodenum. The ulcer looked as if it had existed for a long time.

In these two cases are embodied the ordinary symptoms of an acute and a subacute case of duodenal perforation. In both there were the sudden central abdominal pain, accompanied with vomiting. In the acute case with these symptoms there was collapse, from which the patient hardly rallied. In the subacute case, collapse did not come on till the second day, when it was marked and persistent. In the one case obstruction was hardly a symptom, since there was no time to show it. In the second it did not exist, since the bowels acted freely and repeatedly. In the subacute case it was to be noticed also that there was no abdominal distention.

In both cases, therefore, the first symptoms were those of acute strangulation; but in the acutest, the collapse was more rapid and persistent than is usually met with in strangulated bowel, and in the second case it was equally decided.

In strangulated intestine, however acute it may be, I should like to remind you that collapse is not an early or marked symptom in the generality of cases, although it may be such in very exceptional examples. I have known it occur in an acute strangulated hernia of the congenital kind in a young man. In a general way it may, however, be said that collapse is not an early symptom of strangulation; it comes on slowly, with the pathological changes of the strangulated gut, and, when present, denotes a condition of strangulated bowel, which means its death.

The collapse of perforation is sudden, and most like that of cholera; the sunken hollow eye, the deep far-away voice, feeble pulse, clammy congested skin, all heralding death. The collapse of strangulation is

slower in its onset, and slower in its progress, and rarely so marked and death-like, till death of the patient, with death of the strangulated bowel, is at hand. If I may, therefore, roughly express it, the symptoms of perforation are more acute than the acutest case of strangulation. Collapse is an early symptom, and more persistent; intestinal obstruction need not be present. "A perforating ulcer," wrote my lamented friend, Hilton Fagge, "of any part of the direct channel of the alimentary canal is commonly fatal in a few hours, or in a day or two at the latest. Hence, I believe, that, when peritonitis runs a more protracted course than this, there is a very strong presumption that it started from the cæcal appendix." (*Guy's Hospital Reports*, vol. xx, third series, 1876, page 221.) These points, I believe, are likely to be of value for diagnostic purposes.

I propose now to pass on to a much larger class of cases—to a class which, it may be said, simulates cases of acute strangulation more than any others; I mean cases of perforating ulcer of the cæcum or its appendix, for I have reason to believe that both of these occurrences are met with in practice.

"Perityphlitis, or, more properly, typhlitis or cæcitis," wrote Hilton Fagge (*Guy's Hospital Reports*, vol. xx, 3rd series, 1876), "is a process of ulceration, which almost always begins in the mucous, and spreads to the serous surface. Sometimes, this is accompanied with sloughing of the little tube, or of its extremity. The ulceration is generally set up by the presence of a concretion, which may vary in size from a pea to a plum-stone. This sometimes consists of a substance resembling wax, but much more frequently it is composed of hard dry fæcal matter, mixed with mucus and with earthy salts. Such concretions may look very like cherry or other fruit-stones, and have often been mistaken for them. Indeed, this mistake has been so frequently committed, that many pathologists are disposed to doubt whether ulceration of the cæcal appendix is ever set up by foreign bodies of the kind just mentioned. It is, however, certain that seeds, pills, bristles, pieces of bone, shot, etc., have been found in the appendix. On the other hand, ulcers of this part of the bowel, penetrating to its serous coat, have sometimes been tuberculous."

Chronic cæcitis, or typhlitis, is not likely to be mistaken for intestinal strangulation, unless it be complicated with an attack of acute peritonitis, the result of the bursting of an abscess or perforation; and, under these circumstances, the previous history of the case will throw light upon existing symptoms. I have before me the notes of nine fatal cases of cæcitis, and propose to give you abstracts of them, and, later on, an analysis of the symptoms.

Case li.—Richard O'R., aged 18, a labourer in chemical works, was admitted on March 31st, 1880, under my care. A month previously, he had been suddenly seized with colic, the pains being above his right groin, and intermittent. After the free use of castor-oil, he was relieved, but a pain down the front and inner side of his thigh was left. In two weeks, his thigh began to flex upon his pelvis, and the knee to be everted. He could not, moreover, straighten the limb, and any attempt to do so excited severe pain. When admitted, the boy looked ill. His right thigh was flexed up to a right angle upon

the pelvis, and everted. It could be more flexed without pain, but it could not be extended without giving rise to agony. There was a great hard swelling in the right iliac fossa, and swelling beneath Poupart's ligament, and down the inner side of the thigh. The patient's bowels were regular, and motions natural. It should be added that the case had been sent into Guy's Hospital as one of hip-disease. In a few days, the swelling in the thigh became larger and resonant. It was, therefore, freely opened, when pus, gas, and fæces escaped. Two incisions were made, one in the thigh, and the other within and above the anterior superior spinous process of the ilium backwards, parallel with its crest. The above cavity was well washed out with iodine-water, and drained. The patient was relieved by this measure, but died a month later from hæmorrhage, due to ulceration of the deep circumflex iliac artery. At the necropsy (156), a large sloughing cavity was entered on passing the finger through the wound beneath Poupart's ligament. The cæcum was felt with an opening into it. On injecting the vessels, it was found that the deep circumflex iliac artery, which lay in the posterior wall of the abscess, was completely divided by ulceration. A clot existed at its free end. Above the ileo-cæcal valve in the ileum were a few ulcers, not unlike healing typhoid ulcers. A large ulcer had perforated the valve, leaving an opening large enough to admit the finger. In the cæcum were other ulcers, one of which had perforated, and led into the abscess-cavity. The iliac abscess had burrowed in the course of the psoas, and had travelled between the muscles down the thigh. The hip-joint was bathed with pus, both internally and externally; the cartilages were deeply stained.

Remarks.—This case is full of interest; first, in the attack of so-called colic, a month before the boy's fatal illness, when the pain was above his right groin: secondly, in the fact that, when the pain of colic was relieved, a pain passing down the thigh, in the course of the anterior crural nerve was left: thirdly, in the gradual flexion of the thigh upon the pelvis, and its rotation outwards with inability to extend the limb: fourthly, in the formation of an abscess extending beneath Poupart's ligament down the inner side of the thigh, and the presence of flatus in the abscess: fifthly, in the rapid relief which followed free incisions: and lastly, in the purely accidental ulceration of the artery which led to sudden death. Had this mischance not ensued, in all probability a good result would have had to be recorded.

Some ten years ago I saw, with Dr. Smith, of Highbury, a precisely similar case to this, although it was in an older man. In it, the abscess, which was resonant (as in the former case), not only extended downwards, but also upwards into the right loin. I treated it with free incisions, irrigation, and drainage, and the man quite recovered.

Case lii. *Ulceration of the Cæcal Appendix: Concretion: Suppurative Peritonitis.*—Edward W., aged 37, was admitted on January 2nd, and died on the 5th, 1874. Having been quite well five weeks beforehand, he had strained himself when at work, and could not afterwards flex the right thigh. He also felt a lump above Poupart's ligament. His present illness began fourteen days before admission,

with pain in the hypogastric region, not aggravated by pressure. On December 29th he went to bed as usual, and woke with a distinct sensation of movement in the right iliac region, and with pain. He vomited also, and was purged until January 2nd, when the vomit became stercoraceous; and in this condition he was admitted, with the abdomen distended. A tumour could be felt in the right iliac fossa. There was no hernia. The rectum and the bladder were normal. The urine was albuminous, and full of lithates, of specific gravity 1036. The man died on January 5th.

At the *post mortem* inspection (3) the intestines were found matted together by peritonitis. The appendix cæci was of port-wine colour, and ulcerated at the apex, with a cavity about it which contained concretions.

REMARKS.—This case well follows the last; since in it, as in the other, the pain was first felt in the right groin above Poupart's ligament, and with it there was some pain in flexing the right thigh. It is to be noticed also that with the acute symptoms there was purging, not obstruction. In fact, in the light of present knowledge, all the evidence pointed to cæcal trouble.

CASE LIII. *Abdominal Symptoms: Old Hernia; Exploration: Perityphlitis: Peritonitis.*—Joseph R., aged 17, was admitted August 27th, and died on the 29th, 1873. He had an old hernia on the right side. On August 25th, two days before admission, without any assignable cause, he was seized with some abdominal pain, purging, and vomiting, and these symptoms continued up to his admission, with abdominal distension, and great tenderness, and collapse. His pulse was 126, and temperature 101° F. On August 28th the seat of the old right hernia was explored; only an old thickened sac was found. He died next day. At the inspection (286) the thoracic viscera were healthy. There was suppurative peritonitis, with its focus at the right iliac region. The intestines were glued together; there was pus on both surfaces of the liver. The parts about the cæcum were infiltrated with inflammatory material and pus. The appendix cæci was discoloured and ulcerated; the end of it was not discovered.

REMARKS.—This case was complicated with the presence of an old right scrotal hernia. So, when the man was suddenly seized with severe abdominal pain and vomiting, the suspicion of the symptoms being due to intestinal strangulation was raised; and the fact that purging was a symptom did not do away with the suspicion. The hernia was, therefore, explored, but with no benefit; only an old thickened sac was found. I am not disposed to find fault with the treatment, but consider that, upon the whole, cæcal trouble should have been diagnosed.

CASE LIV. *Perforation of Appendix Cæci: Peritonitis: Pneumonia, following Perforation of the Diaphragm.*—Tom L., aged 12, was admitted August 18th, and lived until September 2nd, 1869. He had been taken ill on August 8th, ten days before admission, with severe abdominal pain and bilious vomiting. The pain continued until the following morning, and recurred four or five times a day. Ten days later he was admitted, with febrile disturbance, abdominal tenderness, and thoracic respiration. On August 21st there was basic pneumonia; on the 26th the abdomen was tumid, with the liver to be felt down to

the umbilicus. Later on, purging ensued. The boy died on September 2nd. The necropsy (227) revealed general pneumonia, peritonitis, with recent adhesions ; a collection of pus in the left iliac fossa, and the recto-vesical pouch, on the under and upper surface of the liver, and on the diaphragm, through which was a perforation into the chest. In the right iliac fossa were two soft friable concretions, near the end of the appendix cæci, which for its last inch was ulcerated and destroyed. The colon and rest of the appendix were healthy.

CASE LV. *Inflammation of the Cæcal Appendix: Sloughing of its Mucous Coat: Perforation of its Neck: Suppurative Peritonitis: Double Pleurisy.*—T. R., aged 20, admitted on July 5th, died on July 7th, 1875. He had been healthy, though never strong. Twelve months beforehand he had had constipation for two days, and abdominal pain, but no vomiting, and had recovered. He was quite well on July 4th, the bowels acting twice naturally. He ate many cherries, and awoke at 5 A.M. on the 5th with sudden violent abdominal pain in the right iliac region. He vomited soon after, and the vomiting thenceforward continued. He was admitted with a tympanitic abdomen. The urine was high-coloured and scanty. On the 6th, the patient had incessant vomiting ; his temperature was 98.3° Fahr., his pulse 128. The pain became agonising, and he sank comatose. The *post mortem* examination (271) showed double pleurisy. The lungs and heart were healthy. There was pus in the right iliac fossa, and lymph between the omentum and coats of the distended bowel. The coils of intestines about the cæcal appendix were of a purple colour, and distended. The cæcum was healthy, its appendage was distended. The neck of the appendix was contracted, sloughing, and perforated. There were no solid bodies in the appendix.

REMARKS.—In this, as in a former case, there had been some antecedent abdominal trouble. The attack for which he was admitted was sudden and typical. In it the acute pain was referred to the right iliac region, and was associated with vomiting ; and these symptoms persisted, and were speedily followed by collapse and death.

CASE LVI. *Ulceration of the Cæcal Appendix: Abscess of the Liver, and between it and the Diaphragm: Extension of the Inflammation to the Pericardium and Mediastinum: Suppurative Pericarditis.*—Jane S., aged 26, was admitted on September 27th, and died on October 5th, 1875. She had never been strong, and had lost eight brothers and sisters. The present illness had begun two months before, in an indefinite manner, with pain in the left side and about the shoulders. She was admitted with distinct abdominal swelling and tenderness below, and, to the left of the ensiform cartilage, with a bulging elastic tumour. An abscess was diagnosed. At the necropsy, the lower lobe of the left lung was fixed to the diaphragm. The pericardium contained six ounces of purulent serum. The heart was contracted as in peritonitis. There was a large abscess between the left lobe of the liver and the diaphragm, measuring 4½ inches across. The upper wall of the abscess had the pericardium as its boundary. Ulceration of the p pendix was found, with fæcal extravasation.

Remarks.—The case had evidently been chronic, and its early history was not full. It well illustrated, however, how a cæcal abscess may burrow, or rather, how an inflammation, which evidently began about the cæcum, may spread and give rise to abscess between the liver and diaphragm, and, through this, to the pericardium. I have known this happen before, in a lady, aged 50, who, for years, had had cæcal trouble, and now and then slight attacks of inflammation. In her last attack the symptoms were very acute, and she died with peritonitis. After death, a large abscess was found between the liver and diaphragm, which had extended through to the chest. The matter had burrowed upwards behind the cæcum and ascending colon.

Case lvii. *Peritonitis: Ulceration of the Vermiform Appendix: Mitral Obstruction.*—John D., aged 28, admitted on August 16th, 1874, died the following day. A week before admission, after being quite well, he woke up in the night with a fearful abdominal pain below the navel, and vomited. The next day the vomit was green. On the third and fourth days the vomiting continued, with constipation. On the fifth day he vomited "stinking matter." When brought to Guy's Hospital on the sixth day, he was pulseless and collapsed. The abdomen was not much distended. He rapidly sank. The necropsy (309) revealed peritonitis, and the intestines matted together with lymph. Near the end of the appendix a hole existed large enough to admit a finger. The appendix was glued to the parts about it.

Case lviii. *Concretions in the Vermiform Appendix: Perforation: Peritonitis.*—William C., aged 18, was under Dr. Owen Rees' and my care on April 14th, 1871, and died on the 17th. On April 6th he had been suddenly seized with violent pain across the abdomen, and with vomiting. On the eighth, the bowels had been open, and again on the 9th, after an enema; but not again after that date. Vomiting had persisted. On admission, he was vomiting, and was collapsed. The pulse was quick and hard; the abdomen tender, not much distended. On the 15th the abdomen was explored with a central incision, and offensive pus escaped. The intestines were found matted together, and, on passing the finger towards the iliac fossa, air bubbled up. The wound was partially stitched up, leaving an opening for drainage, but the patient sank on the 16th, twenty-four hours after the operation. The inspection (108) revealed offensive pus in the peritoneum, which was acutely inflamed. The intestines were matted together. The vermiform appendage was gangrenous, and contained a small kidney-shaped concretion. Towards the end the coats had sloughed, leaving a free opening, through which fæces had escaped. The liver weighed 66 ounces; the kidneys, 9½ ounces.

Remarks.—This case was mistaken for one of internal strangulation, and, as I was called upon to explore it under that diagnosis, I may be free in my criticisms. I believe now, however, the true diagnosis should have been made; since a case of sudden seizure of abdominal pain, accompanied with vomiting, and followed on the second day by a free action of the bowels, and on subsequent days by slight action, was not quite consistent with strangulation. The persistency of the vomiting, rapid accession of collapse, and other abdominal symptoms, pointed also more to perforation. The treatment

undertaken under our (the wrong) diagnosis might, however, have been utilised under the right, but to this I shall refer later on.

CASE LIX. *Fæcal Abscess, with Perforation of the Cæcum, discharging through the Umbilicus: Tubercular Disease of the Intestine: Caseous Mesenteric Glands.*—George C., aged 13, was admitted under my care on September 27th, and died on October 6th, 1877. He had had pain in his right side for months. He was admitted with a fistula at the umbilicus, discharging fæces and pus. He had been complaining for months of sickness and looseness of the bowels. Three weeks before admission he had sudden pain at the stomach, and a week later an abscess broke at the navel. On October 5th there was severe vomiting, which ushered in death. At the inspection (341) general peritonitis of old date was found, and the intestines were matted together. There were tubercles on the bowels, and ulceration throughout, more particularly at the cæcum, in which was a small perforation, half an inch long. This communicated, by a fistulous track, with the umbilicus. (The urachus seemed to have directed it to the umbilicus.)

REMARKS.—This case, if it stood alone, is worth recording, from the unusual and curious course the cæcal abscess took. I confess when I saw it I was quite unable to make a diagnosis, although in the future I hope I, in common with others who may know the case, will be more acute. The case was essentially a chronic one, lighted up by a fresh inflammation, and burrowing. I may add that, although this case is the first in which I have known a cæcal abscess directed to the umbilicus by the urachus, I have known a peri-vesical abscess so conducted.

Eight of these nine cases, extracted from the *post mortem* records, and note-books at Guy's Hospital, occurred in boys or young males, and one in a female subject; these figures, added to Hilton Fagge's, giving sixteen males to three females. In seven, the vermiform appendix was ulcerated or sloughing; and in five cases concretions were found. In two, the cæcum was the seat of ulceration. In all but one, peritonitis was the direct cause of death, with and without suppuration; and in the exceptional case, an accidental ulceration of an artery, followed by hæmorrhage, brought about death. In all the cases, after death, pus and other inflammatory products were found about the cæcum and neighbouring intestines; and, when the appendix was involved, sloughing of its base or apex, and more or less local fæcal extravasation. In one case, the matter burrowed down the thigh. In three, it passed upwards about the liver; and in one case it perforated the diaphragm. In an unusual example, the matter burrowed in the course of the urachus, and was discharged through the umbilicus. Suppurative peritonitis, and some burrowing or extension of the abscess upwards or downwards, was the main cause of death in all.

With these pathological facts, let me return to the clinical, and see by a careful analysis of the symptoms if any guide to diagnosis can be found. In six of the nine cases, amongst the early symptoms, pain in the right side of the abdomen was prominent, and this pain in some cases had existed for months or weeks. In others, it began in that region as an acute symptom. In two at least of the cases, with this pain, there was pain down the front of the right thigh in the course

of the anterior crural nerve. In two cases, there was flexion of the right thigh, and aggravation of pain on any attempt at extension of the limb being made. In a case recently under care, both these symptoms were also present. In three or four of the cases, the bowels were either regular during the progress of the case, or they were loose. In none of them was there any symptom of obstruction. In several of the cases, the abdomen was not distended. In all, there might have been sudden abdominal pain, associated with vomiting; but these symptoms, as a rule, were associated with others to which attention has been drawn, or followed those of a more special kind, which would have been enough to guide the surgeon to a diagnosis. In fact, in the majority of the cases recorded, a diagnosis, or rather probable diagnosis, was possible on a careful estimation of the facts of the cases, and more particularly of their histories. Indeed, in these cases, as in so many others, a careful history of the case is essential to enable the surgeon to form a definite diagnosis. An estimation of present symptoms alone is almost sure to mislead, whereas an estimation of all the facts of the case is absolutely necessary to guide. When an abscess is recognised and is tympanitic, the connection between it and the bowel is readily recognised.

Under these circumstances, I think I am justified in adding that, as a rule, the diagnosis of peritonitis, the result of typhlitis or perityphlitis, ought not to be difficult, and that these cases should not be confused with those of intestinal strangulation; that the only symptoms in common between the two classes of cases are sudden acute abdominal pain and vomiting; and that, whereas in intestinal strangulation these symptoms come on usually in a patient who has been hitherto perfectly well, in cases of typhlitis, on the other hand, there will either be a history of local trouble, or other symptoms to point to it. In typhlitis, whether acute or chronic, the pain will almost always be on the right side of the umbilicus, and, in some cases, will pass down the right thigh in the course of the anterior crural nerve; whilst, in some, the flexor muscles of the thigh will be involved, and extension rendered painful, if not impossible.

In the subacute cases, suppuration may burrow backwards towards the right loin, upwards towards the liver and diaphragm, or downwards towards the pelvis or thigh, or inwards towards the umbilicus. In some cases it will burst into the bowel. In every case, if left alone, acute peritonitis, grafted upon chronic, will bring about death.

With these observations, the subject of treatment ought to occupy our attention; and, taking as our guide the causes of death, I am disposed to think the indications are tolerably clear. Indeed, they all point to an early incision made in the neighbourhood of the cæcum for the evacuation of early inflammatory products in acute cases, and of pus in chronic; for there is little doubt that, in many of the cases recorded, had this relief been afforded, life would probably have been saved. In Case LI, as in the example quoted in the remarks upon it, this result unquestionably would have been secured; and in others it is more than probable. For, when ulceration and extravasation, either direct from the cæcum, or indirect from the vermiform appendix, have taken place, suppuration is almost certain to follow; and when it

has occurred, a process of extension by burrowing in one of the directions indicated by the cases I have quoted, or towards the peritoneal cavity, may be expected to ensue. Under these conditions, a fatal result must be looked for.

Rest, opium, and belladonna, in the early stages of the trouble, are of the greatest value; but, when extravasation has occurred, and inflammatory fluids have been poured out, little reliance can be placed upon them, unaided by the surgical procedures already described. Under these circumstances I would suggest, as a rule of practice, that, in all cases not rapidly subsiding under medical treatment, an oblique incision above Poupart's ligament should be made, from about half an inch external to and above the internal abdominal ring, upwards and outwards, in front of the anterior superior spinous process of the ilium, or even further back above the iliac crest. The incision should extend through the muscles and transversalis fascia, and the finger will then readily pass behind or in front of the cæcum, according to circumstances, to let out inflammatory products. With their exit, convalescence may be expected; without it, some such results as have been recorded in this lecture must be anticipated.

When the cæcal appendix, within a mesentery of its own, is floating in the peritoneal cavity, and becomes the seat of trouble, a localised peritonitis will of necessity take place, as in Case LVIII; and, under such circumstances, the question of opening the peritoneal cavity presents itself. For my own part, I can see no practical objection to the procedure; since, if the case be left alone, a diffused peritonitis is sure to follow the local one, and, as a result, death. In the case quoted (58), this practice was adopted, although under a mistaken diagnosis; but, had I washed out the abscess cavity more thoroughly than I did, and made better provision for its drainage, success might have followed the practice. My only excuse for not having taken these precautions is to be found in the fact that the case occurred in 1871, when we were not so alive as we are now to the value of the means mentioned.

In the short time still at our disposal, I should like to draw your attention to a remarkable case of circumscribed suppurative peritonitis due to an ulceration of the stomach, which had been regarded as ovarian, and tapped, and then sent to me for operation. When I saw and examined the case, I questioned the diagnosis of ovarian disease, but was unable to formulate a better. I consequently made an exploratory operation, which was not successful. The case is as follows.

CASE LX. *Circumscribed Suppurative Peritonitis, communicating with the Stomach.*—Margaret D., aged 24, was admitted on July 22nd, and died on August 11th, 1875. She had been married two years; had had no children; her catamenia had been regular. Soon after marriage, she had noticed a lump in the left inguinal region, which steadily increased until five weeks before admission, when it rapidly enlarged in a few days. Three weeks before admission, she had been tapped, and a brown fœtid fluid drawn off. On admission, she was much emaciated. There was no albumen in the urine. The abdominal swelling was great, but the cavity contained air and fluid; it was not believed to be ovarian. On July 25th, the abdomen was opened, and

a quantity of fœtid purulent fluid drawn off. The abdominal cavity was not supposed to have been opened. The intestine was apparently shut off by membrane. The cavity was washed out, and a drainage-tube introduced. The patient at first did well. On August 1st, seven days after the operation, food taken into the stomach ran out of the wound. She died exhausted on August 11th, the seventeenth day. After death (Inspection 311), the lungs were found to be emphysematous; the heart healthy. In the stomach, at the posterior part of its cardiac end, was an oval opening, one inch in diameter, communicating with what was supposed to have been a cyst. The opening was injected at its edges, but not thickened. The gastric mucous membrane elsewhere was quite healthy. The intestines were all matted together at the back part of the abdominal cavity. Over them lay the omentum, which was thickened, and continuous with a layer of lymph which lined the abdominal cavity anterior to the intestines. A closed sac was thus formed, lined by false membrane, and incomplete only where communicating with the stomach. The intestines were healthy; the mesenteric glands enlarged. The kidneys, uterus, and ovaries were all healthy.

There can now be little doubt as to the nature of this case; the light of pathology having fairly removed the darkness of the clinical phenomena. I had thought the case almost unique, when I dropped upon another very like it which occurred in the practice of my colleague, Dr. Wilks. I give it in abstract, as taken from our *post mortem* records.

Case lxi. *Ulceration of the Stomach: Perforation: Hypochondriac Abscess.*—Mary A. F., aged 32, was admitted on December 22nd, 1877, and died on January 2nd, 1878. She had been subject to winter-cough, and had spat blood on several occasions. She had never noticed her abdomen swollen, nor had had pain until six days beforehand, when she discovered a swelling of the abdomen whilst she was dressing. When admitted, she had a large rounded swelling in the epigastric and hypochondriac region. It was tympanitic on percussion, and there was splashing of air and fluid in it. There was an edge below, which was thought to be that of the liver. On December 24th, she was tapped with an aspirator; air escaped, and then pus, which was fœtid, to two pints. Distension returned. Her temperature was 98° Fahr. She then had diarrhœa, and pain in the right side of her back. On the 28th, she was very low. On the 29th, she was again tapped with a large trocar, and much very offensive pus was drawn off. A drainage-tube was fixed in. The patient gradually sank, and died on January 2nd. At the necropsy (3), the lower part of the abdominal cavity was found to be healthy, the omentum being spread over healthy intestine. The under surface of the right lobe of the liver was adherent to the parts below. The abscess, which was opened, was bounded above and in front by the diaphragm and abdominal walls. To the right, it was bounded by the falciform ligament of the liver. To the left, the cavity extended into a space inside the left ribs, arching the diaphragm greatly, and pressing on the spleen. The floor of the cavity was formed by the whole convex surface of the left lobe of the liver, by the upper surface of the spleen, and by the stomach, into

which there was an aperture through which air and fluid bubbled from the stomach. The stomach was shrunken; on its convex surface was an ulcer, measuring $2\frac{1}{2}$ by $1\frac{1}{8}$ inches, and bounded by a smooth rounded lip of mucous membrane. The base was on the pancreas and the left lobe of the liver.

These cases I simply record as examples of chronic ulcer of the stomach, perforating its walls, and giving rise to an abdominal tumour, in one case simulating ovarian disease.